

THE NORTH DAKOTA FARMER

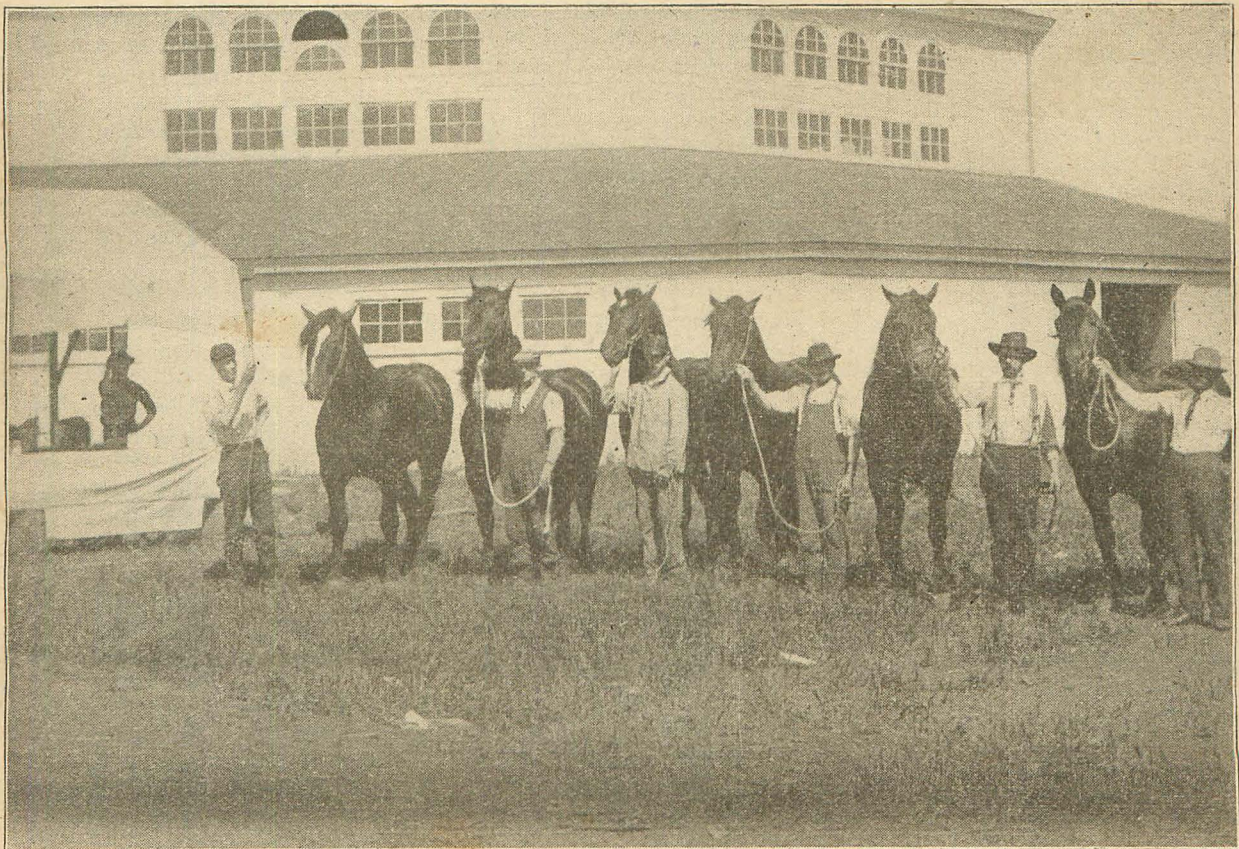


"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

Vol. 9, No. 9
LISBON, N. D.

MARCH 15, 1908

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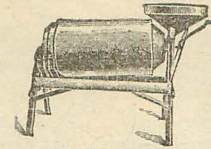
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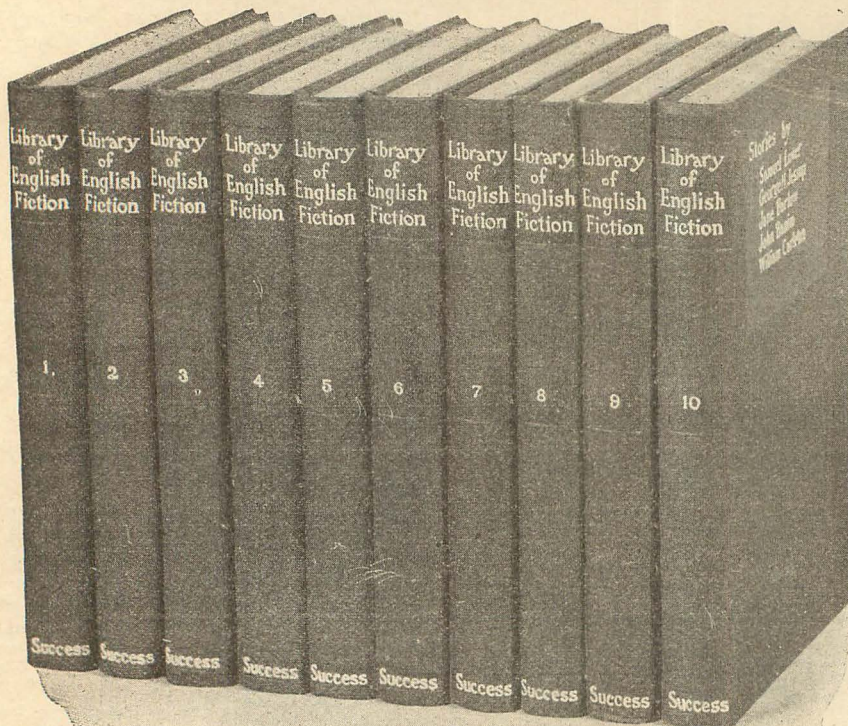
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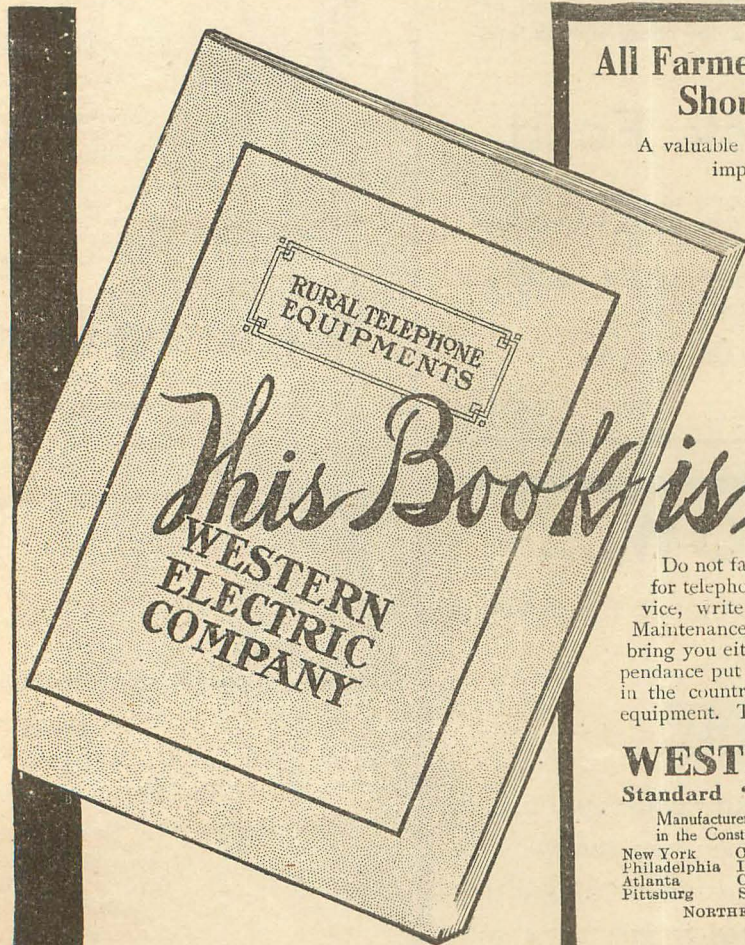
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THE NORTH DAKOTA FARMER

Vol. 9, No. 9

LISBON and FARGO, N. D., MARCH 15, 1908

50 Cents a Year

MY EUROPEAN TRIP

By PRES. J. H. WORST, N. D. A. C.

FARMING IN HOLLAND.

Rotation of Crops, Fertilizers, Etc.

Crop rotation is practiced zealously in all European countries where field crops are the leading agricultural industry. The rotation varies between different countries, or between different provinces of the same country, but whatever system of rotation experience and observation have suggested for adoption is followed with the utmost regularity. The

The larger or real farms range from twenty-five to one hundred twenty-five acres in area, with a very few containing two hundred acres or more. Upon these farms all kinds of grain, grass and root crops are grown.

In the Groningen province of Holland, where general farming is carried on, land is worth from \$260 to \$320 per acre. Nearer the large cities where sanitary dairying is a profitable industry and in localities adapted to bulb cultivation



Raising Bulbs on a Large Scale.

small farms are devoted more generally to vegetable gardening, the products of which find a ready market in the cities and nearby villages. Occasionally a small field of clover is grown in addition to the usual garden truck. A portion of the clover is cut daily, during the growing season, and fed to cows or goats, which are stabled the year round. When the first growth of clover has all been cut and fed, the part of the field first mowed down has grown large enough to repeat the operation. Thus such fields or patches of clover are cut over several times during the season and the family is kept supplied with milk, or some revenue is gained from the sale of milk or butter.

land is valued much higher—from \$500 to \$1600 per acre.

Range of Crops

In the farming districts, wheat, oats, barley, rye, clover, alfalfa, potatoes, rape seed, sugar beets, beans, flax (for fiber), peas and canary seed constitute the principal crops. Moreover, practically all of them are grown on the same farm every year. The Dutch farmer loves variety. This rather diversified range of crops is grown in about the following proportions; one-half of farm in cereal crops, one fourth in clover, alfalfa or vetches, one-twelfth in cultivated crops and the balance in flax, peas, etc. Flax is only grown for fiber and is not seeded on the same ground oftener

than once in ten years on account of the disease known as flax wilt, which is prevalent in Holland as well as in our own state.

The following rotation, together with fertilizers used is about the average for northern Holland.

1st year. Sugar beets, potatoes, onions, etc., for cultivated crop. (Fertilizer: commercial phosphates.)

2nd year. Peas, beans, etc. (Fertilizer: barn yard manure.)

3rd year. Wheat, oats, barley, rye, etc., with clover under wheat or barley. (Fertilizer: Chili Salt Petre.)

4th year. Clover or alfalfa; clover left standing two years and alfalfa four years.

5th year. Canary seed, rape seed, flax (for fiber), etc.

6th year. Sugar beets, potatoes, onions, etc., as in first year.

If the farm contains fifty acres or more it is divided, as nearly as practicable, into twenty-five fields. This enables the Dutch farmer to rotate to his heart's content and grow several fields each of grass, cereal or cultivated crops. Rotation is carried on in sets of fields. As open ditches parallel each other at intervals of about sixty feet and serve the purpose both of drainage and fence it is not difficult to have many fields. The numerous ditches and small fields however, make it necessary to do most of the harvesting with hand implements.

In fact, most of the farm work, aside from plowing and dragging, is performed by hand.

A farm of seventy-five acres, divided into twenty-five fields of three acres each would be cropped somewhat as follows; sugar beets one field; onions one; potatoes one; wheat four; oats three; flax one; barley two; canary seed one; field peas one; field beans one; rye one; clover four; alfalfa two; the clover allowed to stand two years and the alfalfa four years.

The above is not exact, but for variety of crops grown and quantity of each, fairly represents the annual products of an average Holland farm. It also will be seen that nearly one-third of the farm is given up to legumes or nitrogen gathering crops, which, with the barnyard manure and the commercial fer-

tilizers employed, insures a high state of fertility for the farm.

Land Plowed Frequently

Land devoted to cultivated crops, such as potatoes and sugar beets, is plowed but once for the following crop. All stubble ground, such as wheat, flax, canary seed, etc., is never plowed less



A Reaping Machine

than three times, allowing about three months interval between first and last plowings, to prepare it for the next crop. The first plowing is not more than two inches deep, but each succeeding plowing is a little deeper, the last from six to eight or ten inches deep. The ground is harrowed after each plowing.

Alfalfa is usually allowed to stand about four years. When alfalfa ground is broken up the first plowing occurs quite soon after an early crop of hay is cut. Following this, six additional plowings are given the alfalfa field, each time plowing a little deeper, until the last, which is from eight to ten inches deep. While seven plowings is the rule for alfalfa ground it is never plowed fewer than five times and always harrowed after each plowing. This may seem like excessive cultivation of the land, but the Hollander contends that experience has demonstrated the necessity for it and goes on in the even tenor of his way. When we consider that the fields are not generally of greater extent than from two to six acres, the large amount of cultivation does not seem a great task.

Yield of Crops

In the Groningen province where these observations were made, wheat averages above fifty bushels per acre. Occasionally as many as sixty-five or sixty-eight bushels per acre are grown. Since our return from Holland one farmer reports seventy bushels of wheat per acre for the current year. Oats average over ninety bushels per acre with a maximum of one hundred twenty bushels per acre, and other crops in proportion. Potatoes yield from four hundred fifty to over five hundred bushels per acre.

It will thus be seen that on account of systematic crop rotation, the liberal use of fertilizers and what would appear to be excessive cultivation, an acre of land in Holland will yield as much as four acres in North Dakota, as we farm it. In other words a fifty acre farm there is equivalent to a two hundred-acre farm here, or a hundred sixty-acre farm there is equal to a section farm here. This is more strikingly apparent when we take into consideration the fact that yields are quite regular in Holland; crops are seldom poor in that country. And yet the land has been farmed, much of it, for centuries. Under soil conditions prevailing in Europe the farmer calculates with nice exactness between the labor and fertilizers he puts upon a given field and the returns it will make the following harvest. Nothing is taken for granted. They have a saying, "no fertilizer, no crop; little fertilizer, little crop."

I do not expect North Dakota farmers will go to these extremes of cultivation and fertilization, but rather this is written to show what soil will do—what century worn lands will yield—when given scientific cultivation. The intensive cultivation given the land keeps it from weeds and the careful selection and the purity of the seed they sow materially improves the yield of all cereals.

The Noordhuis Farm

Mr. H. Noordhuis, of Eenrun, Holland, to whom I am indebted for much of this information, is a graduate of Wageningen Agricultural College and ranks as one of the best farmers in the province of Groningen. His farm of one hundred twenty-five acres was a demonstration of what has been said in the foregoing paper. Aside from the barn-yard manure produced on the farm from seventy sheep, eight horses and fourteen cows he spends annually about \$400 for commercial fertilizers. Where the land is quite loamy and considerable clover is grown and fed to livestock less artificial fertilizer is required to keep up the fertility of the farm.

Mr. Noordhuis makes a good living on his one hundred twenty-five acre farm and lays up money besides. In fact he is one of the well-to-do farmers of that province. While his average crop yields are somewhat higher than those of all Holland, it is because he farms his land more skillfully, more intelligently. Many of his neighbors do equally well.

From observations made in this neighborhood I am more than ever convinced that our North Dakota farmers can well afford to pay considerable attention to manuring their lands and to putting more labor, in the way of better plowing and more frequent dragging, upon their fields. Instead of repeatedly plowing stubble land it should be plowed at least once, properly.

Too many of our farmers turn an eighteen-inch furrow with a fourteen-inch plow and skim over the land, when, if plowed good depth and dragged until a good seed bed is prepared the yield would be far greater. In other words, if a fourth more labor were put on the land a half more grain, probably, could be grown. The best part of the season's profit would result from the comparatively small amount of extra labor put on the land.



A Stand of Oats

Doubtless European farmers are compelled to give their land the very best care and cultivation to make a profit, even with cheap labor, which is not at present the case with us; but it also would pay us, in the long run, to give our land more care and better cultivation.

Farm labor is cheap in Holland, averaging in the neighborhood of \$3.20 per

original building that it occupied dozens of special buildings, sheds, converted residences, etc.—probably the worst and most curiously housed federal Department of any age or period of a big country. But the new building authorized, stately and commodious was to do away with all this, the other buildings owned by the government were to be consigned to the junk heap and the pri-

1100 persons; now it employs 2100. The wise old secretary, under whose observant eye the new building has risen, saw how things were going on and that his department would have outgrown the new structure before it ever got into it, and so he had the building planned on the unit system; that is, in such manner that while always complete, wings and L's can always be added to it without destroying the harmonious effect. When Mr. Wilson's game became apparent to certain members of Congress, as the new building began to assume shape, loud kicks were heard, to use a mixed metaphor the charge being made that the secretary had no right to change the plans and practically force Congress to make further appropriations for the building. But the old Iowa farmer as usual carried the day and had the building built as he wanted it.

And so it seems quite natural to see Senator Dollivar who hails from Secretary Wilson's state introducing a bill appropriating \$3,750,000 for an addition to this building. Whether this measure will get thru this session or this Congress is a question. It should unquestionably. There is no great government on earth except the United States that does so much of its important business and keeps so many valuable records in such a heterogeneous mass of buildings as does ours. Take as a single instance the Division of Pomology. It occupies four or five little bits of private two-story brick houses each about 16 feet wide, and the Plant Industry Bureau of which it is a part, is scattered in half a dozen different localities so that to make the rounds of the various parts of the Bureau you need a horse and buggy.



A Field of Peas

week, the laborers boarding themselves. Women do considerable of the field work and get about \$1.60 per week for their services. By working overtime the average laborer can earn in the neighborhood of \$20 a year in addition to his regular salary.

Land rents are high. In this neighborhood several farms brought their owners as much as \$17.50 per acre, cash rent.

All things considered North Dakota is a paradise for such as would "get on" in the world. The poor but industrious man can hope, here, to get an independent home—even become comparatively wealthy; not so there. The landed proprietor, even the small farmer, can live comfortably there but the farm laborer can scarcely hope to improve his condition.

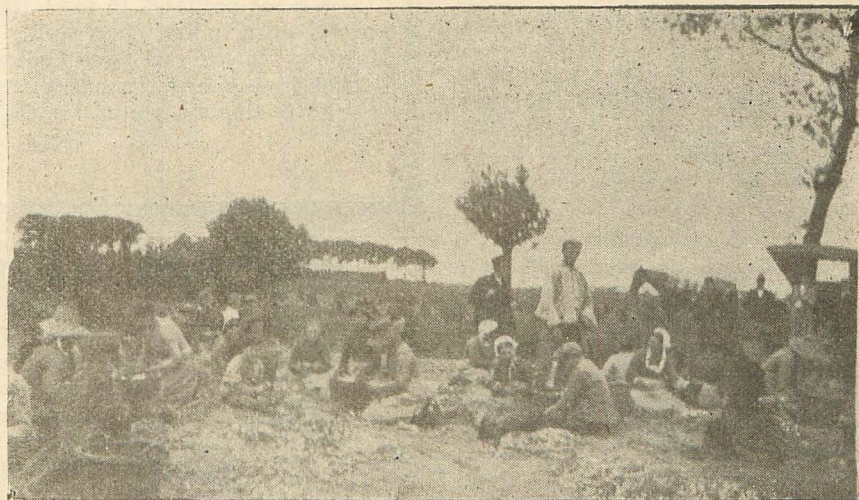
ON FROM WASHINGTON

Guy E. Mitchell

New Temple of Agriculture

In February, 1903, Congress appropriated \$1,500,000 for a new building for the Department of Agriculture. Even then the Department had so expanded beyond the capacity of the old

vate houses vacated. It must be so, for Congress, always wise, so provided. Alas for that body's foresight. The new building is completed, a handsome white marble structure, well worthy of Uncle



Farm Laborers at Work

Sam's important farm department, only it isn't half big enough, and the little buildings and shacks are still doing duty as of yore. In February, 1903, the department employed at Washington

The amount which the government spends annually, in rent, for these unsafe and inconvenient buildings would pay the interest and more on a much costlier building than the present new million

and a half dollar temple and Senator Dollivar's proposed addition.

A late issue of the American Bee Journal contains an interesting article by W. C. Lyman in which he describes a device in which swarming is controlled in a satisfactory manner. A brood chamber is connected with the main hive by means of a passage which opens in front near the entrance to the main hive. The bees are thus given additional room for rearing the brood and for accommodating the increasing colony without the necessity of swarming.

Notable Washington Conventions

Secretary Wilson was a busy man last week with extra duties to fulfill in presiding over the convention of the American Breeders' Association and the annual meeting of the American Forestry Association. Both organizations claim him as president, and he fills both places with grace and ability.

The meeting of the Breeders' Association is its fourth annual convention and it this year brought together again a large gathering. Naturally the Department of Agriculture was largely represented at the meetings as some of its members are among the most noted of plant and animal breeders. Dr. W. M. Hays, the Assistant Secretary of Agriculture is one of the most famous plant breeders in the United States, having as agriculturist of the Minnesota University and Experiment Station, made remarkable progress especially in grain development.

The proceedings of this convention brought out the need and necessity of progress in breeding. Papers and addresses presented at the meeting have shown the great improvement in plant and live stock breeding thruout the United States. All lines of production were considered, from fish breeding to improvement of man himself, the highest animal. In this connection Dr. Alexander Graham Bell made a plea for Congressional action which would lessen undesirable immigration.

Horse Breeding

Quite an innovation was introduced in the address of Jouett Shonse of Kentucky who in discussing the improvement of the thoroughbred horse, severely criticised Governor Hughes of New York for his crusade against racing. "If racing is destroyed by law," he said, "it will strike a death blow not only to the further improvement of the horse, but also to the breeding of the saddle and harness horse as well. The evils of gambling ought to be suppressed as far as possible, but these evils are of much less magnitude than the evil effects which follow the destruction of racing."

An interesting report was submitted by H. K. Devereux of Cleveland, Ohio,

on "Breeding Thoroughbred Horses." He said the United States government, unlike most of the governments of the world does not aid breeders, and there is no interest so much abused as the breeding horsemen.

Andrew Boss of Minnesota appropriately discussed the breeding of short-

horn cattle and the improvement of Morgan horses, used abroad it is stated as war chargers, was touched on by Louis Battell of Vermont.

An interesting talk was given by C. J. Jones, known to all breeders in the country as "Buffalo" Jones, on the extensive experiments carried on by him



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in producing the *hybrid* which he has styled "cattlo" by crossing the buffalo of the plains with cattle.

Plant Breeding Discussions.

Interesting addresses were made on "Breeding Cantaloupes," by P. K. Blinn, Rocky Ford, Colo.; "Breeding Cereals" by L. S. Klinck; "The Field of Plant Breeding in the South," by David Coker, Hartsville, S. C., "Breeding Carnations" was treated by Prof. Norton of the Agricultural Department, and Hon. Willis Ward of Queens, N. Y.

A. D. Shamel, in submitting his report on "Breeding Tobacco" established a unique precedent by distributing samples of cigars thru the audience.

Altho the place of the next meeting has not yet been decided upon, it is expected that Chicago will be selected by the council as the place of the fifth annual convention.

The new officers are for President, James Wilson, secretary of the Department of Agriculture; for Vice President, Charles W. Ward of New York, and for Secretary, W. M. Hays, Assistant Secretary of the Department of Agriculture; H. M. Mowry, assistant secretary; treasurer, M. H. Gentry; chairman of animal section, A. P. Grout, Winchester, Ill.; secretary of animal section, Dr. C. B. Davenport, Cold Spring Harbor, N. Y.; chairman of plant section, H. J. Webber, Washington; secretary of plant section, Prof. N. E. Hansen, Brookings, S. D.

The American Carnation Society also held its annual convention, several of its sessions being combined with those of the American Breeders' Association.

Appalachian Forestry Bill

The principal theme of discussion before the meeting of the American Forestry Association was the proposed Appalachian and White Mountain Forest Reserve bill, now pending before Congress. This measure has been urged upon Congress by the President, by State governors and hundreds of local forestry organizations, commercial bodies and business men who see in the rapid extermination of the Appalachian forests grave menace to the water supply of the entire region, increasing danger from floods and the drying up of navigable streams. In his opening address, Secretary Wilson said that he had been looking into the question of the headwaters of the New England rivers and the headwaters of the great rivers of the South. The people, he said, are cutting woods way up to the tops of the mountains. There are four or five inches of soil and just as soon as they get the wood out the soil begins to wash and destroys the limited belt between the mountains.

It is high time, he said, that this association and the Congress of the United States were considering these great problems. Are we to lose the use of our

great rivers? We are taking care of things measurably well in the great West. I do hope our representatives will carefully consider the wisdom of making beginnings along the line of stopping the cutting of the woods and the mountain tops, both in New England and the Appalachian range. Secretary Wilson was reelected president of the Forestry Association.

THE PLANT FOOD IN A TON OF MANURE

By Cyril G. Hopkins, Urbana, Illinois
Experiment Station

The amount of food contained in a ton of farm manure varies considerably and depends largely upon four important factors, which are probably correctly ranked in the following order:

1. The condition as to dryness.
2. The kind of feed and bedding.
3. The state of preservation.
4. The kind of live stock.

The plant food in a ton of manure varies with the dry-matter content. Thus, manure containing 85 per cent of water is only half as rich in plant food as the same manure after the water content has been reduced by evaporation to 70 per cent. This may seem impossible at first thought, but careful consideration will show that it is true. If the manure contains 85 per cent of water, it can contain only 15 per cent of dry matter; whereas manure containing only 70 per cent of water must contain 30 per cent of dry matter. Very erroneous conclusions are frequently drawn regarding the comparative value of different manures because of apparently small or moderate differences in water content. Average fresh mixed cattle and horse manure and ordinary amount of litter, or bedding, contains about 75 per cent of water and 25 per cent of dry matter. Thus, a ton of such manure contains 500 pounds of dry matter and 1500 pounds of water.

The plant food in a ton of manure varies greatly with the materials used for feed and bedding. Thus, wheat straw contains per ton about 10 pounds of nitrogen, 2 pounds of phosphorus, and 17 pounds of potassium; timothy hay contains about 24, 3 and 24 pounds of these respective elements; and clover hay

about 40, 5 and 30 pounds, respectively, of nitrogen, phosphorus and potassium. At 15 cents a pound for nitrogen, 12 cents for phosphorus and 6 cents for potassium, the value of these elements is \$2.76 in a ton of wheat straw, \$5.40 in timothy hay, \$8.40 in clover hay, and \$9.42 in a ton of alfalfa hay.

The following facts may well be kept in mind:

1. In grain crops about two-thirds of the nitrogen, three-fourths of the phosphorus, and one-fourth of the potassium required for the crop will be contained in the grain, while about one-third of the nitrogen, one-fourth of the phosphorus, and three-fourths of the potassium required for the crop will be found in the straw or stalks.

2. In nitrogen and phosphorus, clover and other legume crops are about as rich as grains, nearly twice as rich as timothy or red top, and more than twice as rich as straw or stalks.

3. When crops are fed to live stock, about three-fourths of the nitrogen, three-fourths of the phosphorus, and practically all of the potassium contained in the feed will be returned in the solid and liquid manure, the animals retaining about one-fourth of the nitrogen and one-fourth of the phosphorus, as a general average.

From these facts it becomes very plain that the quality or richness of manure must depend largely upon the kind of feed used.

The plant food in a ton of manure varies greatly with the exposure it has suffered under the weather conditions. If ordinary fresh farm manure contains 10 pounds of nitrogen, 2 pounds of phosphorus, 10 pounds of potassium per ton of manure with a dry matter basis of 25 per cent and 75 per cent water, the manure that will result from holding such fresh manure until it becomes more or less rotted will vary greatly in com-

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position, depending upon the conditions to which it is subjected. If the fresh manure is exposed for a few weeks to the leaching of heavy rains, half of the nitrogen and potassium may be leached out, while smaller losses of phosphorus and dry matter occur, so that a ton of the resulting manure, in which the urine (which usually contains about half of the nitrogen and potassium) has been replaced by rain water may contain only 6 pounds of nitrogen, 2 pounds of phosphorus, and 6 pounds of potassium. This difference of four pounds each of nitrogen and potassium does not represent the total loss, because if the pile contained 10 tons of fresh manure there will be left perhaps only 8 tons of the leached manure, even with the same percentages of dry matter and water.

If, however, the pile of manure suffers less from leaching but more from fermentation and heating for several months the loss of dry matter or total weight will be great and the loss of nitrogen considerable, while the loss of phosphorus and potassium will be less. Thus, after six months of such conditions, the 10 tons of manure, with 100 pounds of nitrogen, 20 pounds of phosphorus, and 100 pounds of potassium, may be reduced to five tons of manure containing 60 pounds of nitrogen, 18 pounds of phosphorus, and 80 pounds of potassium. This rotted manure, with the same per cent of dry matter as the fresh, would contain in one ton 12 pounds of nitrogen, 3.6 pounds of phosphorus, and 16 pounds of potassium. Rotted manure produced in this way is usually richer per ton than fresh manure, but the total amount of manure has been so reduced that the actual loss is very great.

These simple principles should be kept in mind:

1. In leaching fresh manure there are great losses of nitrogen and potassium and moderate losses of phosphorus and organic matter, the materials lost being carried away in the leach water.

2. In fermentation and heating there are great losses of nitrogen and organic matter in volatile products which escape into the air, but if no leaching occurs there is no loss of phosphorus or potassium.

In an exact experiment conducted at Cornell University, 4000 pounds of ordinary manure from the horse stable, worth \$2.74 per ton for the plant food it contained, were exposed in a pile out of doors from April 25 to September 22 (less than five months) but at the end of that time the total weight had decreased to 1730 pounds, and that was worth only \$2.34 per ton. In other words, the value of this pile of manure was reduced from \$5.48 to \$2.03 during five months' exposure. In another experiment, manure exposed for six

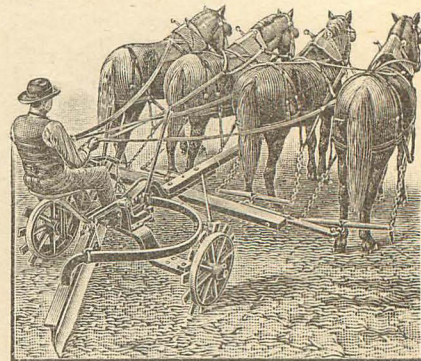
months lost 56 per cent of its dry matter and 43 per cent of its plant food value. In this case the fresh manure was worth \$2.27 a ton, while the rotted manure was worth \$3.01 a ton, but the loss in total weight and in plant food was such that for each ton originally worth \$2.27 there remained only \$1.30 worth after six months' exposure.

The plant food in a ton of manure varies somewhat with the kind of live stock. Thus, young growing animals and animals giving milk will retain a larger proportion of the nitrogen and phosphorus than fattening stock, work horses, or other mature animals. On the other hand it is well to understand that the difference in value commonly recognized and most frequently considered, as for example, between sheep manure and cattle manure, are due almost entirely to differences in water content. As a matter of fact, manure from work horses or from fattening steers fed on clover hay and heavy grain rations is fully as rich and valuable as sheep manure if both are reduced to the same percentage of dry matter. Of course, sheep manure containing only 60 per cent of water is twice as rich as cattle manure containing 80 per cent of water.

The information given above, based upon the records of chemical investigations, will enable one easily to understand and appreciate the scientific and practical reasons for avoiding some methods and for adopting other methods for handling farm manure.

Average moderately fresh cattle or horse manure, made from clover and timothy hay and some grain, with sufficient straw bedding to absorb and retain the liquid manure, will contain per ton of manure about 10 pounds of nitrogen,

2 pounds of phosphorus, and 10 pounds of potassium, on the basis of 25 per cent of dry matter. Computed at the present market value for these elements, —15 cents a pound for nitrogen, 12 cents for phosphorus, and 6 cents for potassium, such manure is worth \$2.34.

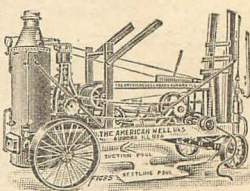


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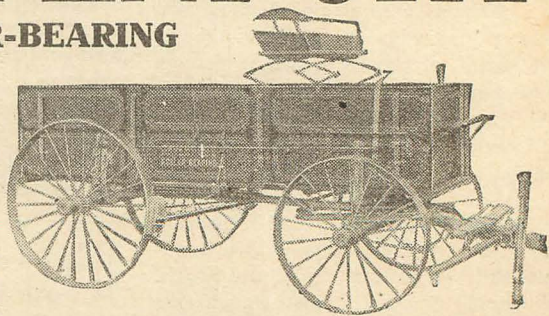


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The farmer not only feeds and clothes the world, but his rich, warm blood coursing thru a healthy body, his brawny muscle made hard and strong under the skies and in the sunlight of heaven, his brain clear, comprehending and free from unhealthy environments, must vitalize the functions of the human race and hold it in line of advancement and progression, and yet they do all this work for humanity without organization for co-operation to protect themselves in trade with the people who are so dependent on them. We feel that the dawn of a new day is at hand, when the farmer will do his own thinking instead of submitting to the other fellow to think for him. Heretofore the farmer has thought of nothing but how to raise the crops. Under the control marketing idea he is now thinking how to sell his crop after he gets it raised. The A. S. of E. has the right plan to bring to the farmer a fair share of profits on the products he produces from his farm by hard toil, which he has unjustly been deprived of by the gamblers on the boards of trades.

ITEMS OF INTEREST

A meeting of the State of Board of Directors of the A. S. of E. of North Dakota was held at the State Headquarters at Casselton, N. D. March 6, 1908. There was the necessary number of directors present to form a quorum. The meeting was called to order by State President H. O. Brown. The following business was transacted:

On motion, a summary of the financial condition of the State Union was read by Acting Secretary, Chas. U. Pierson. The report was satisfactory to the executive board.

A resolution was passed endorsing the plan of organizing farmers' elevator companies and establishing farmers' elevators at all local shipping points where an elevator is necessary, by members of the A. S. of E. and farmers who approve of the plan, as we deem it the most feasible method of establishing local storage and shipping facilities, for the use of members of the society and farmers who desire the best means of marketing their grain. We recommend that at the next meeting of the National Board that the matter be taken up and some steps taken to put the proposition before the members of the American Society of Equity, setting forth a plan whereby the farmers can get together and establish farmers' elevators and arrange to have representatives of all the farm elevators in each grain growing state to meet at a given date in each

state, so that plans may be arranged to have all farm elevators of the state ship their grain to the Equity Exchange incorporated by representatives of the American Society of Equity only.

A resolution was passed recommending our State President to be instructed to submit to the National Board at their meeting in June for consideration, that it is the pleasure of the State Union of North Dakota that some steps be taken to establish Equity Exchanges for the marketing of farm products to consumers and that such Equity Exchanges be incorporated by representatives of the American Society of Equity only.

A resolution was passed that the State Secretary and Treasurer be instructed to carry \$5,000 bond, to be placed in the custody of the State President.

We are pleased to be informed that the National Union of the A. S. of E. is so fixed that the Society can take over and own its official paper the Equity Farm Journal at any time it is advisable to do so. This is undoubtedly good news to the members of the A. S. of E. and their friends, as it is the first time in the history of the society that the A. S. of E. be allowed to own its official paper, "another rapid step forward."

Now that the society can own and control its own paper, we expect good results therefrom and if the members are inclined to pay up their dues we will soon have the largest circulation for the Equity Farm Journal of any paper in the United States which will mean a source of revenue for the Society and not for any one individual. Our official paper the Equity Farm Journal is alright and it contains more official news about the A. S. of E. than the Up-to-Date Farming ever did.

The condition of the Society in North Dakota is very encouraging. We have taken in about 300 new members within the last 40 days. We have meetings advertised to organize six (6) new local unions next week. We have held 226 local union meetings since December, also several union meetings and at each meeting the members voted to support the new set of National Officers and approve of the action taken at the National Convention by the delegates who attended the regular Convention and elected new officers according to the National Constitution and By-Laws.

Out of 319 local unions in North Dakota we have found but 3 local unions that passed resolution to follow the leadership of Mr. Everitt and one of those locals rescinded the action taken.

North Dakota State Union has kept from 6 to 8 men in the field since December and they are doing good work for the society. There is no doubt but that we have a good system, which we are using to promote the work of organization in this state.

Chas. U. Pierson, State Director of Organization, is doing double duty since the 18th of February, as he is Acting State Secretary in the place of A. D. South, who is sojourning in California, where he is now spending his honeymoon. We congratulate Mr. South on his good luck.

We hope that the Equity members will subscribe for the North Dakota Farmer, as it is a good, clean farm paper and ever ready to advocate anything for the benefit of the producers in this state, besides it publishes a department for the A. S. of E. giving news of the society in North Dakota.

In the March 1 issue of the ex-official paper, the Up-to-date Farming, on Pages 16-17, I notice the compliment paid me by the Ex-President of the A. S. of E., Mr. J. A. Everitt, which reads as follows: Chas. U. Pierson State Organizer of North Dakota is making an extraordinary effort to surpass the editor of the Equity Farm Journal as the champion liar. He is also aspiring to be a candidate for attention from the state or government officials."

I have always been averse to entering into any controversy thru the newspapers, but sometimes we are compelled to give our side of the question whether we wish to or not.

Now in regard to my aspiring to the championship Mr. Everitt accuses me of, I assure the Ex-President I have no desire to deprive him of that honor which rightly belongs to him and which every A. S. of E. member knows he has held in the past. No, Mr. Everitt, do not worry, you are liable to hold that championship for sometime to come unless you change your way of living Mr. Everitt says:

Quoting an extract from my letter to Mr. G. S. Bugbee, Maxbass, N. D., reading as follows: "He (Mr. Everitt) was seen to come up-stairs in the elevator on the 4th floor in the hotel where the hall was located and where the convention was held, but instead of coming into the meeting he sneaked off into the bed-room adjoining the hall, where he sat and listened to everything going on and what was said about him by the other National Officers and was not man enough to come in and present his charges."

Hundreds are using Personal,
page 3.

I will say that there is nothing in that paragraph of my letter to Mr. Bugbee to signify whether the hall in which the Convention was held was on the 4th floor or 2nd floor of the Denison Hotel. I simply state "in plain words" that the hall was located in the same hotel where Mr. Everitt was seen to go up in the elevator to the 4th floor. There is nothing in that paragraph stating that Mr. Everitt did not come down and take up his position in a bed-room on the 2nd floor, which he evidently did as he was seen there in a room adjoining the hall.

It appears that a person must be very explicit in making statements, otherwise Mr. Everitt will fail to comprehend the exact meaning. I sympathize with Mr. Everitt in his affliction, but perhaps his is not a hopeless case. He suggested that perhaps the drinks in Indianapolis made Pierson see things in distorted forms, adding that a change of water affects some people. No, Mr. Everitt, the water quite agreed with the writer during his stay in Indianapolis. They have good water to drink in that part of the state. As to stronger drinks, I cannot say whether they have them or not, as I never drink anything stronger than good water, but if you think drinks affect everybody alike perhaps in your own case you had better consult a specialist and find out if you have not some of that water on your brain.

Mr. Everitt says that the conspirators managed that he would be notified that the hearing would not be that night referred to. Well, let us see about that. In the afternoon of Friday, October 25th, Mr. Everitt stated in his remarks before the convention that he insisted on a special time to be set for him to have a hearing with the other National Officers, that each side might offer their charges and produce their proof to substantiate them. In order to show Mr. Everitt that the delegates would treat him fairly and accord him due consideration, a motion was made and passed that the Convention have a night session as per Mr. Everitt's suggestion. Accordingly the night meeting was called at 7:30 P. M., and as I stated in my letter to Mr. Bugbee, Mr. Everitt failed to put in his appearance and he does not deny that fact, because he knows that all the delegates there will bear me out in my statement. The other National Officers came to the meeting, which was called by the request of Mr. Everitt. Why did he stay away? He stated that he was informed that the hearing would not be held that night. That is a very flimsy excuse indeed. When the meeting was his meeting (so to speak) and it only required his presence to have the hearing. I will leave it to the people to decide if they should have confidence in him under the circumstances.

Mr. Everitt also stated that Pierson is

aspiring to be a candidate for attention from the state and government officials. If Mr. Everitt ever stated the truth in his life he did so when he made that statement. I have been striving to get the attention of some of the government officials, but not for personal gain as Mr. Everitt would have you believe. I have been very active in getting the members of the A. S. of E. in this state to endorse petitions which were sent to Washington, protesting against the Shaw rebate act on imported wheat and also endorsing the McCumber bill for Federal inspection of grain. I wish that every state organization of the A. S. of E. in the country would have taken the matter up with the representatives in Washington from their respective states and worked as hard to have the Shaw act rescinded and the McCumber bill passed by Congress as the State Union of the A. S. of E. in North Dakota did. Then perhaps there would have been more consideration given to the interest of the farmer by Congress. Yes, Mr. Everitt, as long as I can by act or speech attract attention of government officials or state officials to the needs of the farming class to which I belong I will certainly do so; and if you were at this time friendly to the A. S. of E., I feel that you would be the first man to commend me for it, or you would not be following the lines you have been preaching. I do not think it necessary for the officials of the A. S. of E. whether in the state organizations or at Headquarters to waste valuable time in useless quarrels with Mr. Everitt. The rank and file are quite well posted in regard to the conditions and time will help the farmers to decide that the delegates acted wisely in

the actions taken by them at the National Convention. The Convention was called in regular form and presided over by Mr. Everitt until they elected new officers according to the National Constitution. Is it any reason that Mr. Everitt should rebel against the majority rule and secede because he could not have his own way and be the first man to violate the Constitution he so long urged us to uphold? No, my dear fellow farmers, he had no moral right to assume the attitude he is now taking and I believe each one of you will sooner or later agree with me.

In conclusion I urge you to stand by the A. S. of E. and not be misled by what Mr. Everitt published in his paper to deceive you. Let him follow the lines of the A. S. of E. as we are doing and not continually be trying to tear down our organization. Let him do as he promised the Convention he would do: that is, stand by the A. S. of E. and support the new set of National officers. If he would do that, we are willing and ready to offer him the hand of fellowship and help him build up the society he made us acquainted with. Let him be willing to co-operate as he taught us how to do and we are for him every time. But until he shows a disposition to do so, we must prevent him from disrupting our beloved society if we can.

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INQUIRIES ANSWERED.

BONANZA KING OATS

Will you please answer the following question thru the columns of your helpful paper?

Have you ever known Bonanza King Oats to yield 140 bu. per acre? What is the average number of bushels per acre that it does yield? Do you advise its cultivation in this state? What kind of oats thrive best here?

Agnes Hennessy. Anamoose, N. D.

Answered by Prof. J. H. Shepperd

In reply to A. H. I wish to say that I do not know the bonanza king oats in question. This station has never grown a one hundred bushel per acre oat crop, altho we produced a little above 90 bushels on one occasion. Upon irrigated lands they get very heavy yields of all cereal crops and such a yield as you mention is possible under such conditions.

There are a number of good varieties of oats in this state. Among the strains with a long growing period like the White Russian, there is North Dakota No. 388 (Tartarian) which has made the best average showing of any of the later oats that the station has tried out. This is a White Russian oat bred up by the Station since 1892. The Silver Mine, Swedish Select, Abundance and Lincoln have also made a good showing.

A variety called North Dakota No. 666 or Sixty Day oats, otherwise Kherston at times, has been a good early oat which is about two weeks earlier than the White Russian. This early oat is an accession to our list as it divides and lightens harvest by being in shock before the late oats is ready to cut. It is ready to thresh by the time harvesting is done, which is usually a welcome feature in its favor.

Can you answer thru your paper about how many pounds of emmer (speltz) are required to make 100 lbs. of pork with hogs in thrifty condition?

C. F. Adams. Nichol森, N. D.

Answered by Prof. Richards

No experimental work has been done in feeding emmer (speltz) by our experiment stations. For that reason we have no knowledge of how much of the grain it would take to make 100 lbs. of pork. It is not very generally fed to swine because it is not well adapted as other grains for this purpose. There is too much hull on the grain to make it good hog feed, especially for fattening purposes. For feeding brood sows during the time of pregnancy, it will answer well. If our inquirer finds it necessary to feed emmer to fatten his hogs, he should feed some shorts with the emmer, about one part to two of emmer, or if

shorts cannot be secured, one part of barley to one of emmer, or any other suitable hog feed. It may be possible to get the pigs in fairly good condition for market by feeding emmer alone, but it will take a comparative large amount of the grain and time to do it.

I have some nice grade B. P. Rock pullets and wish a cockerel. How am I to know that a breeder has absolutely pure bred high stock? How am I to know whether the cockerel he sells me is a poor thoroughbred or a good thoroughbred after I have him? Is there a score card or small pamphlet that would aid me in telling the choice breed from the common one?

W. E. Ebersole. Upham, N. D.

Answered by Prof. O. W. Dynes

As a rule you can place dependence on the Barred Rock breeder who advertises his stock for sale or wins regularly at any poultry show. A fair knowledge of the true type of Barred Plymouth Rocks may be secured by a visit to a good poultry exhibit or the yards of a reliable breeder. A study of Farmers' Bulletin No. 51 on "Selected Varieties of Chickens," U. S. Department of Agriculture, Washington, D. C., will also give you a reasonable familiarity with the breed. The American Standard of Perfection published by the American Poultry Association, is of course the final authority in matters of this sort.

Answered by Prof. C. B. Waldron

Mr. W. R. Whitcomb,

Crary, N. D.

Dear Sir:

In response to your letter to The North Dakota Farmer concerning blue grass and white clover, I will say that these do not start well with a nurse crop. If the season turns out to be extremely favorable with abundance of rain they will start reasonably well in a field of grain but under ordinary conditions we have had very fair success in starting them that way. The best method is to prepare the land as for any other crop, sowing seed as early in the spring as possible. Our method has been to use a wheel-barrow seeder as the seed of this grass is so light that it is difficult to sow evenly by hand unless one has considerable experience along that line. Even then it can only be done on an unusually still day and, of course, the seeding is not very uniform. These wheel-barrow seeders are simple and cheap and can be obtained thru any implement dealer. The amount of seed to be sown to the acre depends entirely upon what use is to be made of the land. If it is for lawn purposes we recommend sowing

about 60 lbs. to the acre. This is, of course, unnecessarily thick for pasture. If the seed is of good quality, about 12 lbs. to the acre or even 10 lbs. will answer very well for pasture. We advise putting in about half red top if the grass is to be used for hay as this makes a heavier and better growth than June grass does alone. I will also say that even where it is to be used for lawn we like to put in a good liberal supply of red top as this keeps green somewhat longer than does the blue grass. Unless you are sowing this grass primarily for the purpose of a lawn, I think you will do well to substitute some other variety in the place of the blue grass. For instance, brome grass will make more than twice the pasture that blue grass will, particularly thru hot and dry parts of the season when blue grass often get brown. On the other hand, if you want to grow grass for hay, I would recommend a mixture of timothy and red top in preference to either brome grass or blue grass. By Canada blue grass I suppose you refer to what botanists call *Poa nemoralis*. This is the native blue grass of this part of the country extending far to the northward. The Kentucky blue grass has been introduced of later years and seems to make a more vigorous growth than the native blue grass.

One of the most successful hay plots that we ever had at the College was a mixture of timothy and red top with a slight mixture of blue grass. We cut fine crops of this for two or three years. Gradually, the timothy killed out and the red top prevailed. Later on, we kept it mowed for a lawn. The blue grass and white clover came in, so now it is a fine mixture of these three and is an excellent lawn.

Answered by Prof. C. B. Waldron

Miss Agnes Hennessy,

Anamoose, N. D.

Dear Madam:

Replying to your inquiry concerning willows, I will say that we consider this about the best tree for certain purposes that can be grown in North Dakota. Wherever a thick, bushy growth is desired to act as a wind-break or shelter belt the willow is probably the best tree to be planted. Also where it is considered advisable to grow trees for fuel, it is found that the willow is very profitable. One should exercise care in selection of species. There are some willows, particularly one of the native ones, which are hardly more than bushes and very troublesome ones at that. The laurel leaved willow, while making a very beautiful single specimen is not adapted for close planting. The two species which have proven satisfactory are the ordinary gray or white willow and the golden Russian willow. I

think, perhaps, I should recommend the first for planting for fuel purposes and the second for wind-breaks as it has a somewhat bushier growth and is also more ornamental. These willows are both ordinarily started from cuttings. These cuttings can be obtained from nurserymen at retail price of about \$2.50 per thousand.

For a hedge or wind-break I would set the cuttings about one foot apart, keeping them well cultivated for the first two years. For a grove, I should set them about four feet apart each way. These will also need pretty constant cultivation for the first two or three years. It is sometimes customary when the land is not ready for planting to set the cuttings somewhere in the garden where they can be cultivated for the first season. They quickly develop into strongly rooted plants which, when set out in a tree plantation, are sure to live. It has been found by experiment that the willow will give a yield in fuel at the rate of five cords per acre per annum, that is, an acre of willows eighteen years old should make ninety cords of four-foot wood. This at any point in the state would be worth about \$5.00 per cord making an income of, at least, \$25 per acre per year from the land set to trees. As the expense of planting, care, interest on land, and final cost of cutting and marketing would not aggregate over \$5 per year, you can readily see that the income from such land is far in excess of what it would be when devoted to ordinary process of farming.

One would have also the advantage that the trees afford in the way of protection to his garden and small fruit as well as to his buildings. You are probably aware that the willow never needs replanting and when it is cut off at the ground it quickly grows again, repeating its first performance.

This tree, like all others, is best planted early in the spring. When we start them from cuttings, we ordinarily soak the cuttings for a few days before inserting in the soil. We find that the cuttings start better if they are set in a slanting position in the soil than when set upright as in the settling of the soil which follows the thawing process in the spring, it naturally settles firmly about the cuttings that are set in a slanting position but shrinks away from them if they are set upright. The rapid destruction of the forests and the consequent rise in price of all kinds of timber products has led thoughtful people in the direction of tree planting and any one who undertakes this, at the present time, in an intelligent manner is sure to be well aid for his undertaking.

Hundreds are using Personal,
page 3.

HIGH WHEEL OR LOW WHEEL WAGONS

Of late there has been considerable discussion among the farmers as to whether the high wheel or low wheel wagon for drawing loads up grade is best. I submit, therefore, the following question to be answered thru the columns of the North Dakota Farmer.

"Equally loaded, which wagon will run lighter up grade on the average farm or country road, the high wheel or low wheel?"

A. E. Holmes.

Mercer, D.

Answered by R. M. Dolve, Instructor in Farm Mechanics

In the case of two equally loaded wagons with different sized wheels, the wagon having the larger wheels will be the lighter in draft. The difference in draft will depend upon the hardness and smoothness of the road bed. In a perfectly smooth and unyielding road bed, like the steel rails of a railroad, the difference in draft will not be very marked, unless one set of wheels are very small, but on a yielding earth road the difference may be considerable. Where a wheel cuts into the road bed, forming a rut, the effect is nearly the same as tho the wheel was climbing a grade. It will be readily seen that the smaller the wheel, the steeper will be the grade up which the wheel is attempting to climb. Aside from this, small wheels since they will cut deeper ruts are more destructive to the road bed than large ones.

As to running two equally loaded

wagons of unequally sized wheels up grade, the extra pull resulting from the grade will be practically the same in both cases, but the wagon with the small wheels will pull heaviest by an amount equal to that which it pulls heavier on the level if the road bed is in the same condition in both cases.

BUMBLE FOOT

Bumble Foot is a Form of Stone Bruise. It is generally caused by constant confinement upon hard floors or runs or may be caused by the fowl jumping on a hard surface from the perch or other high place, extremely narrow perches causing it. In mild cases the bottom of the foot is swollen and is inflamed and noticeably painful. The foot should be held in warm water for fifteen or twenty minutes, after which apply boric acid ointment, which is made by adding one part boric acid to five parts vaseline. Repeat this for three days or more, keep the bird confined in a coop that has some sort of soft bedding in it. In aggravated cases abscesses form and the swelling must be opened. Dust the wound with iodoform and apply the boric acid ointment. Bandage the foot daily, as above, keeping the fowl confined until the wound has healed.

Boys Interested in Corn Culture Contests Should Read Personal on Page 3.



Before submitting to an operation, or going to a Hospital, or Hot Springs, consult a reliable Specialist. Get cured at home cheaply, by our mail order system. Personal interview not necessary. If troubled with Nervous or Chronic Diseases of the Nose, Throat, Stomach, Liver, Bowels, Kidneys, Bladder, Catarrh, Skin Diseases, Exema, Acne, Rheumatism, Scrofula, Neuralgia, Sick headache and Vomiting, Billiousness, Dizziness, Heart Disease, Backache, Varicocele, Nervous Debility, Lung Troubles, Female Weakness, Spinal Disease, Paralysis, Epilepsy, Dyspepsia, General Debility, Hysteria, ask for our Free Examination blank and find out whether or not your ailment can be cured. Address, Dr. J. C. R. CHAREST, Huntington Block, 106 Broadway, Fargo, N. D. Therapeutic Specialist.

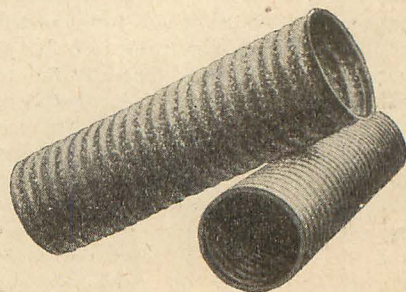
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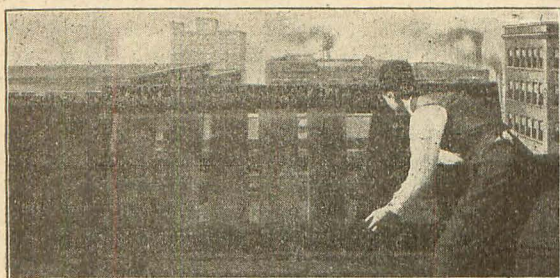
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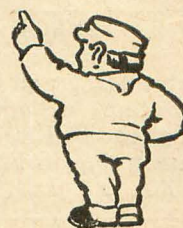
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If this paragraph is marked your
subscription is out. Before re-
mitting read **PERSONAL** on page 3.
We are trying to help you in your
farm life.

STRAWS SOMETIMES TELL

A few radishes, a little lettuce and
early onions started in a box of rich gar-
den soil will give you a good supply of
early vegetables for the table. Do not
forget that it is now time to get ready for
these. It will pay to have a few to-
matoes and cabbages started in the
house for transplanting and then you
will be sure of plenty of good tomatoes
in the fall.

Are you planning to treat the seed
wheat for destroying smut? It will well
repay you to do this. One pound of
formaldehyde in 45 gallons of water is
the proper strength for wheat. The
wheat may be dipped and well drained
or you may sprinkle the wheat and
shovel over in a pile. The latter
method is the simplest and generally
used.

Formaldehyde does not lose its
strength on standing over winter. The
water evaporates more rapidly than the
formaldehyde so it is growing stronger
and not weaker.

Formaldehyde which has become
milky and at times nearly gelatinous in
the container is unfit for use. It will
not destroy the smut but does frequent-
ly kill the germ or the wheat will not
grow.

How shall I use formaldehyde for
disinfecting after measles, small pox,
etc., is frequently asked. The most
satisfactory way we have found is to
hang a sheet across the average sleeping
room or two if the room is large. Close
up the room and have it well warmed.
For each sheet take four to five ounces
of 40 per cent formaldehyde. Mix
with an equal quantity of water and
spray or sprinkle on each sheet. The
gas is harmful so tie a towel or cloth
over the mouth and nose which has
been dampened with water and no gas
will be inhaled while doing the work.
Now close up the room for 24 hours,
then ventilate and you will have done a
good job and the germs will have been
well destroyed.

If clothes are to be disinfected in the
room, see that they are hung up loosely
and sprinkle a little of the water and
formaldehyde on these.

I read of a farmer who went down in a
well, was overcome by gas and lost his
life. This was not necessary. Always
make it a rule before going into a well
to first lower a lighted lantern to the
bottom. If the light flickers and goes
out remember no man can go into the
well and get out alive without assistance.
If the light flickers and scarcely burns
you are taking great chance. Life is
too precious to waste in this way.

A man to succeed at anything must
keep everlastingly at it. Success comes
only to those who will persist against ob-
stacles and overcome them as they are
met in life. Success means diligence,
perseverance, determination, honestly
put forth and centered on a just cause.

The man who is always looking for a
snap is seldom of much credit to him-
self or the community. He fritters
away his energies and accomplishes
little of good.

Stock is now high in price. It is a
poor time to start in the stock business
on a large scale. The man who made
the money is the one who began in the
lean years, built up his business and had
something to sell when prices were high.

How often we hear men say that
barley is high this year now is a good
time to go into barley and make some
money. They pay a fancy price for
seed and then the price of barley is low
at the end of the year and oats or corn
are high. Why? Because many others
thought as did you and a good crop
forced down the price. Be a top notch-
er and be ready to sell to others but do
not rush into any business when prices
are at the top notch.

It is said that the so-called "Velvet"
Chaff wheat is not a good flour or bread
producer and the mills do not want it.
Go slow in making a change until you
are sure you will find a market for the
crop.

A few hens should be found on every
farm. They prevent waste, pick up the
lose grain, eat the crumbs and waste
from the house and cost but little to
keep. They supply the family with
eggs and pay largely the grocer bills,
while in the fall a hundred well fattened
chickens furnish a good income and dry
years do not mean a failure with them.
Look after the hens.

Do not neglect to set out a small
clump of trees this spring and keep them
well cared for during the first and sec-
ond years. Mulch them during the
summer if you can not water them in
dry weather. A clump near the house
can receive the wash water on wash day
and how much they will add to the
attractiveness of home life and cheer old
age! The children which grow up sur-
rounded by trees and flowers will make
our best citizens.

Filtering water will not remove the
alkali salts or take out the other salts.
Filtering removes only the mud and
solid particles in the water. Bad water
is often the cause of ill health especially
among the children and aged. We have
seen waters in North Dakota containing
so much of Glauber salts that the aver-
age horse drinking of such water would
receive not less than four ounces per day
of Glaubers salts. Enough to provoke
frequent attacks of colic.

We have been eating nothing but
durum wheat flour for some time and
ask for nothing better for breads. Not
so snowy white as some "bleached" or
"electrocuted" flour but nutritious,
sweet and satisfying. Farmers are you
eating durum flour? If not, then why?
Help create the demand for it and do
not take the inferior article because it is
snow white.

Did you read in a recent issue of the
North Dakota Farmer Mrs. Weeks' arti-
cle on the fireless cooker? If not it is
worth looking up and you may be able
to get some benefit by adopting the
suggestion.

The blanket of snow ensures moisture
in the land this spring. Eastern farm-
ers say a good spring blanket of snow on
the land is about equal to the addition
of manure to the land.

**Boys Interested in Corn Culture Con-
tests Should Read Personal on Page 3.**

Wheat, wheat, everlastingly wheat is like pie, pie, until pie becomes repulsive to the system and health begins to break. So with wheat continuously grown, the land becomes depleted and fertility must again be added. The present generation takes no heed of the needs of posterity and in so doing you impoverish self. Lasting success in agriculture can come only in diversity. Wheat as the central money crop but some corn, oats, potatoes, roots, hay, clover, pasture, hogs, dairy cows, sheep and poultry.

Wheat should not be shipped out of the state, only the finished product—flour and all the bran and middlings fed to grow and fatten the farm animals. In this way the fertility of the land would be largely returned and the fattened steer, sheep or pig would be shipped. One ton of butter would remove not more than 25 cents worth of fertility. How different from one ton of wheat removing about 34 lbs. of nitrogen, 15 pounds of phosphoric acid and 9 pounds of potash or more than \$8 worth of plant food which sooner or later must be returned to the soil.

No soil is so fertile but what if you continue to remove or mine it from the land in time it will become exhausted. Your bank account if drawn upon regularly without being added to soon becomes exhausted. You would not expect to constantly draw water from a pitcher without replenishing the supply, neither should you consider it possible to constantly draw from the soil without adding thereto and not become a bankrupt in the end.

There have recently been issued from the North Dakota Experiment Station several very valuable bulletins which should be in the hand of every intelligent farmer and farmers interested in agriculture. If you have not them send for them at once and ask to have your name placed upon the mailing list for all bulletins as issued.

Eggs may be kept for several months perfectly fresh if to 12 quarts of boiled water there is added one quart of water glass, (to be had at the drug store.) Use a jar or a tin vessel and add the eggs to this solution from day to day as gathered. Keep in a cool place.

BUTTER PRICES

To what extent have prices increased during the past ten years? This may be well shown by comparing the price for fancy western creamery butter in the New York market for the several years. In 1896 and 1897 the price of butter was at its lowest mark at any period during the past twenty years.

Beginning with the year 1897 we find the average quotation for the years to have been as follows:

Average Yearly Price for Butter		
Year.	Price per lb. cents.	
1897	18.85	
1898	19.71	
1899	20.65	
1900	22.78	
1901	21.65	
1902	24.16	
1903	24.17	
1904	21.40	
1905	24.87	
1906	23.75	
1907	28.26	

It will, therefore, be observed that there has been a gradual increase in the selling price of butter during the past ten years, until for the past year the average price has been above 25 cents per pound.

The maximum monthly price during this period for the New York market is quoted for April, when the average was 32.54 cents, while the lowest price ranged in June at 23.60 cents per pound.

DURUM WHEAT FLOURS

In a recent bulletin from the Department of Agriculture of Canada, Dr. Saunders discusses the subject of durum wheats, and his report does not differ very materially from that which has been found for wheats examined in North Dakota. Dr. Saunders says:

"The two durum wheats examined show conclusively that the common custom of regarding these as all of one quality is absurd. They are often spoken of as macaroni or goose wheats, as if they were all the same as goose wheats, and useful only in making an edible paste. While the goose (or wild goose) cannot be recommended for bread-making, the Kubanka produces admirable bread which, however, differs in some respects from that produced in most of the other wheats. The Kubanka dough must be made rather stiffer in order that it may not be too sticky to handle conveniently. It rises very well, and produces a large loaf of very fine texture and of good form. The inside color of the bread is quite yellow, but this gives an appearance of richness and can only be objected to on the grounds of prejudice. Taking all its characteristics into consideration, I have no hesitation in saying that the bread produced from this sample of wheat was of excellent quality."

Our own observations have shown that there is a marked difference between the different types of the so-called durum or macaroni wheats. The true durum wheats, Kubanka and Aronautka, have given most excellent results, and it is not unlikely that at times the old goose wheat has become mixed and

sold, and has given some of the discredit which has come upon the durum.

On the other hand, the durum wheat should be treated differently in milling, as well as in bread-making, in order to secure the best results and, therefore, the durum should be kept separate from the other hard wheats.

The writer is and has been eating for some time durum flour, and for bread-making he asks for nothing better.

SPREADING TUBERCULOSIS

The December bulletin for the Massachusetts State Board of Health contains a most interesting and instructive article on the "Unsuspected and Dangerous Tuberculous Cow." There is much of information in this bulletin which should be read by every dairyman and progressive person in the state. It has been clearly shown that some of the animals which are apparently free from any suspicion of tuberculosis taint are spreading the disease thru expelling the tubercule bacilli, and continuously expelling them all the time in increased numbers.

A number of experiments are cited where it is shown that the milk produced by the cow, not suspected of tuberculosis from general appearance, was a source of infection, and that guinea pigs, when inoculated with the milk or butter made from the milk, died affected with the typical symptoms of tuberculosis.

We, thus, see the necessity for observing the greatest care in the use of milk drawn from herds which have not been tested to show their freedom from tuberculosis or in cases when there are tuberculosis animals present in the herd.

IS THE PUBLIC SCHOOL JUST TO THE BOY?

Probably no man has come to know youth, and especially the boys of our country, better than has Judge Lindsey; and what he has to say with regard to the influence of the school in the shaping of a boy's life work and in molding his character will be of more than passing interest to our readers. He says:

"I have traveled much in the last year, visiting and inquiring about the schools in many cities. I say without hesitation that if real justice were done to the American boy we could not approach that stand better than to abolish every high school and turn their magnificent buildings and the enormous sums to run them into practical manual training schools and trade schools for all the children who wanted to come before they reached their fifteenth year. That one act in time would do more than all the courts to reduce idleness and crime among the young."

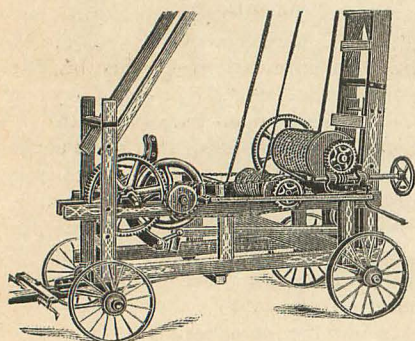
There can be no better plea for the need of industrial and technical education than that which has been sounded by so able a man as Judge Lindsey.

AMONG OUR ADVERTISERS.

LET US HAVE GOOD ROADS

We are in receipt of the descriptive catalog of Edwards' Rural Road Grader and Ditcher. Those having road work in charge will find it to their interests to investigate the merits of this machine. The simplicity, strength and reasonable price will commend themselves to all.

ARTESIAN WATER



The above illustrates the famous Hercules Rock Drilling Machine which may be operated by horse power, steam engine or gasoline engine. It is one of the popular machines manufactured by the American Well Works, Aurora, Ill. It is one which gives the operator complete and instant control of the machine while drilling. It has 28-inch adjustable stroke, is mounted on steel axle and wheels. The derrick folds down on two supports for moving. Nearly every group of one-half dozen farmers throughout the country should have one of these machines to discover the pure water which lies beneath the solid rock of mother earth. It will also enable them to discover the mineral resources and in many cases add immense value to the real estate. It also enables many men to employ their time with good profit.

Literature and full particulars in regard to all sorts of machinery, tools, engines, pumps and complete equipment may be obtained by writing the American Well Works, Aurora, Ill.

EVER SICK?

Hatcher Brothers Corporation are meeting with great success in their line, writing over 200 new policies every month. They paid about \$10,000 in claims the past year and during the month of February paid nearly \$1800. This list, of course, is getting larger every month as they are getting more business on the books. One cause of their success is that they have entire charge of claims and pay them immedi-

ately on receipt of the doctor's report. It will pay you to investigate this thriving North Dakota concern.

A VALUABLE NURSERY BOOK

We have just had the interesting catalog of Strand's Nursery brought to our desk thru the mails. This is their only salesman; they employ no agents and have built up their large and steadily increasing business by exercising the greatest care in having stock reach their customers in the best condition. This catalog is not only valuable because it represents a saving of agents' commissions, but will prove of benefit to any farmer or grower of plants, shrubs or trees in this northwest territory.

Anyone desiring to procure the hardiest of trees or plants adapted to the northwest will do well to write for this catalog.

CAUSTIC BALSAM SPEAKS FOR ITSELF

I have been handling Gombault's Caustic Balsam for fifteen years with success, and the liniment will speak for itself when used.—J. M. BURGE, Lebanon, S. D.

BELL EQUIPMENT FOR RURAL LINES

The addition to the facilities of the Western Electric Company which already made it the largest single manufacturer of telephones and telephone apparatus in the world by the erection of a complete new plant, covering several acres, at Hawthorne, near Chicago, and the subsequent announcement that hereafter it would sell instruments and apparatus in the open market in competition with independent telephone manufacturers, marks the most important development of many years in the domestic telephone situation. This is the first time in its history of more than thirty years that the Western Electric has entered the competitive field of trade. Down to the present time its output has been devoted entirely to supplying the requirements of the various Bell companies. This has been due, not to unwillingness to serve others than the lessees of Bell instruments but to the fact that the growth of the Bell system has been so tremendous that even with repeated additions to the various plants of the Western Electric Company it has been unable to turn out more than enough equipment to satisfy these demands. It was only with the completion of the huge Hawthorne plant that it became possible to fill outside orders.

What the new attitude means to independent purchasers, especially to the

thousands of patrons served by the fast-growing farmers' and other, co-operative systems of the country is indicated by the fact that the resources of the greatest and most completely equipped factories in the country are now for the first time placed at their disposal. Anyone who has the price can buy a Bell telephone, regardless of whether it is to be used on a Bell system.

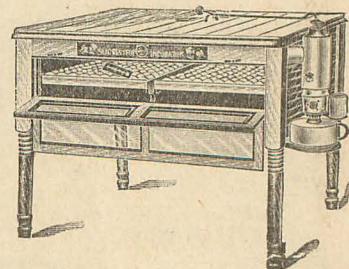
To the general public, and to the rural telephone user in particular, the main interest of this new policy lies in the growth of competition which the entry of the Western Electric Company into a field hitherto controlled by the independent manufacturers will bring. One of the chief results expected, is a demonstration that the claims to patronage of their companies is based upon ability to provide the best equipment and service at reasonable rates and not upon a monopoly of instruments which they have been charged with maintaining.

The rapidity of the growth of the systems operated in the United States by the American Telephone and Telegraph Company and allied companies is shown by the increase during the past decade in the number of telephones in use. At the beginning of 1907 it is estimated that there were 7,107,836 instruments installed in the Bell lines of the United States, or about ten times as many as in 1896.

Aside from the advantage of securing a share of the fast growing trade in what is regarded as one of the most promising fields for future telephone exploitation—the rural lines—it is anticipated that the use of Bell apparatus will lead to a natural demand for the extension of Bell service in districts now served by local lines.

SUCCESSFUL INCUBATORS MEAN CERTAINTY

Certainty of results is what every one should have in mind when he buys an incubator or brooder. Don't be misled by either visions or promises of phenomenal hatches. A 100% hatch is a



rare thing. The incubator that you can depend upon to give you good hatches each time and every time without your looking after it every half hour is the one that is most profitable.

We are illustrating such a machine here. It is one of the old reliables, the

famous Successful Incubator manufactured by the Des Moines Incubator Company, Des Moines, Iowa.

The Successful Incubator and Brooders are, above everything else, practical and sure. There is no estimating the good they have done the poultry industry of this country. They have started thousands of beginners and developed many more thousands into large successful poultry raisers. The certainty or dependability of the machines under all conditions have produced these great results.

We not only have a high opinion of Successful incubators and Brooders but we like the way in which they are sold. There is no misrepresentation. Mr. J. S. Gilerest, President and Manager of the Company, believes the truth is good enough to tell. This over his signature in the beginning of the Company's 28-page 1908 book is interesting: "We believe in the goods we offer and we think the truth about them is strong enough to convince you of their merits. We don't promise impossible things and we want you to hold us strictly to our promise. We cannot afford to have any reasonable person dissatisfied."

The book from which the above is quoted is a great poultryman's book. There is a wonderful fund of practical

information in those 128 pages. If you have never seen it send for a copy. It is the Company's regular catalog and is mailed free. In addition to the catalog the Company publishes an excellent booklet on the "Proper Care and Feeding of Chicks, Ducks, Geese and Turkeys." The title indicates its valuable character. This last will be mailed on receipt of 10 cents.

THE BEST REMEDY FOR ALL AILMENTS

I have found no ailment on man or beast for which Gombault's Caustic Balsam is not the best remedy.—Peter Skardvedt, Tislo, S. D.

Modern Practice in "American" Centrifugal Pump Construction Bulletin No. 104, is just issued by the American Well Works, Aurora, Ill. It illustrates all the styles of centrifugal pumps made for different purposes for such pumps such as farm irrigation, drainage, brewery pumps, fire pumps and many other similar purposes.

This well known firm also furnishes complete literature in regard to machinery for well drilling, oil, gas, etc. Our readers will do this publication a favor by stating where they read this notice, in writing this firm.

OILS, PAINTS, AND PAINT PIGMENTS.

LABELING PAINTS

Under the North Dakota Law it is required, where constituent, other than

the statutory ones are employed, that the paints shall be labeled to show the quantity or amount of each and every "ingredient" used therein.



The Paint That Lasts

is the cheapest paint to buy, the cheapest paint to put on, and the cheapest paint to keep in good condition. It lasts longest because it is ground in PURE LINSEED OIL. It makes no difference what paint is made of, if it isn't mixed in PURE LINSEED OIL it WON'T LAST.

Minnesota Paints

are mixed and ground in PURE LINSEED OIL of our own manufacture. Most paint grinders buy their oil,—we make ours from selected Northwestern flaxseed—the best in the world—in our own mills and it never leaves our buildings until it is mixed in Minnesota Paints. The other things in our paints are PURE White Lead, PURE Oxide of Zinc, PURE Tinting Colors and Driers. Use them once and you'll never use any other kind.

For 37 Years "The Best Paints Made"

Put up in full Government Measure cans—look better, cover more surface and last longer than any other paint.

*"A Special Paint for Every Paintable Surface"
Inside or Outside.*

Some dealer in your town sells them—or write to us for Booklet "Practical Painting" and color card and we'll tell you where to get them.

Minnesota Linseed Oil Paint Co.

1102 Third Street South, Minneapolis, Minn.

How to Avoid Stale Paint

Use Carter Strictly Pure White Lead, mix with pure linseed oil and dryer, and you will have fresh paint that will look better, wear longer and cover more than any canned paint mixture or substitute for pure white lead.

CARTER Strictly Pure White Lead

is every atom paint. None of the clay, chalk, water, benzine, etc., that cause ordinary imitation paints to scale, crack and fade. Gives any desired color. Sold by reliable dealers everywhere.

Send for our booklet, "Pure Paint." Shows six beautiful color schemes, and tells how to properly paint farm buildings. Tells how to test white lead and detect adulterants, and will save you money. Sent **FREE**.

Address Dept. W

CARTER WHITE LEAD CO., Chicago, Ill.

Factories: Chicago — Omaha.

Of late there has been a tendency on the part of several manufacturers to so arrange their labels as to make the meaning to the general public as obscure as possible.

By the term "ingredient," as used in the Law the Department understands that the name intended is not the chemical name by which a pure product may be known but, rather, the commercial name of the ingredient. To label a product "Barium Sulfate," gives no information either to the consuming public or the chemist as to what the ingredient really is. It may be barytes or a precipitated barium sulfate; two products often quite different in value for use in paints. The term "Calcium Carbonate," does not convey the same information as would be the case were we to use the terms "Marbledust," "Whiting," etc. The term "Gypsum" from ground rock may mean a very different product from precipitated calcium sulfate. As far as possible the labeling should be made to show the "ingredients" which have entered into the preparation of the paint.

Some of the labels now being prepared and affixed to paint cannot be accepted as meeting the requirements under the North Dakota Law, unless the same is so interpreted by the Courts.

The label proposed by this Department is as follows:

Contents of Can.....gal.....lbs
Per cent of Pigment, by weight 62%
Per cent of Thinner or Vehicle by wt 38%

100

The thinner or vehicle is composed of:

Per cent

Linseed oil 70
Turpentine 5
Japan drier 5
Benzine 10
Water 10

100%

Composition of pigment:

Per cent

White lead 25
Sublimed lead 20
Zinc oxide 20
Barytes 15
Whiting (calcium carbonate) 6
Gypsum 10
*Color 4

100

*The color is composed of: (name of ingredients and composition when necessary to be given; that is, when other than chemically pure color is employed.)

The foregoing form of label is intended to give to the public and to the chemist the fullest information with regard to the ingredients employed. To give the per cent of sublimed lead as sulfate of lead and zinc oxide, does not enable the chemist or consumer to separate the lead and zinc, as represented, from other forms of sulfate of lead and oxide of zinc, which may have been employed in the preparation of this product.

The term "zinc lead white" is more descriptive of the article employed than would be the enumeration of the chemical components of this product, which then could not be differentiated from other forms.

Wherever it is possible, therefore, in labels the name of the "ingredient," and not the chemical name of the constituent, should be mentioned on the label. Wherever labels differ materially from this class of labeling, the Department will deem the same as improperly labeled.

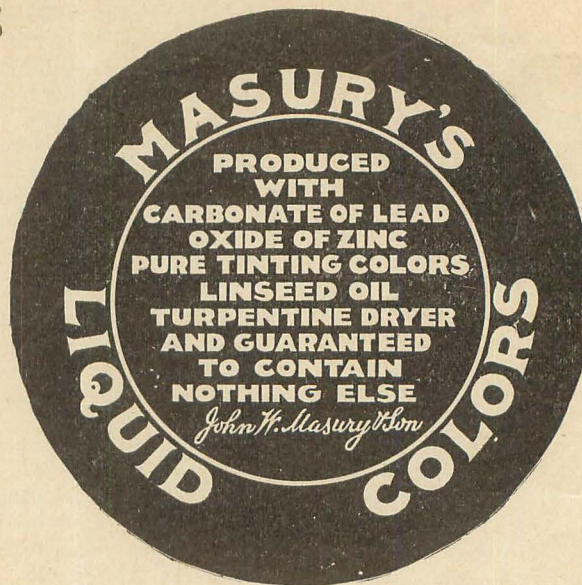
NATIONAL PAINT LAW

Congressman Marshall of North Dakota has introduced at Washington a bill intended to regulate the sale of paints in so far as correct labeling is concerned. All paints must be labeled to show the true composition, name of the manufacturer, and the net weight of measure; and thus it would become possible for a person in any part of the

Hundreds are using Personal,
page 3.

MASURY'S
HOUSE
ARE

THIS
ON



LIQUID
PAINTS
PURE

LABEL
EVERY
CAN

100 PER CENT DURABILITY.

With a record of sixty-five years is the guarantee that

MASURY'S PURE LIQUID HOUSE PAINTS

Offer for Durability and Economy.

THE STANDARD OF EXCELLENCE FOR SIXTY-FIVE YEARS

JOHN W. MASURY & SON, Manufacturers. Paints, Colors and Varnishes.
NEW YORK ST. LOUIS CHICAGO MINNEAPOLIS
NORTHWESTERN BRANCH, 320-322 Second Ave. No., Minneapolis

What Will It Do?

This is the question for you to ask when buying paint.

There are too many paints on the market that have no merits except that they sell at a low price or are made of S. P. Lead or Lead and Zinc.

What you want in paint is

1st.—DURABILITY

2nd.—COVERING CAPACITY

3rd.—APPEARANCE

4th.—COST PER YEAR TO
PROPERLY PROTECT
THE SURFACE

The Heath & Milligan Paints

possess the above qualities and insure BEST RESULTS

ASK OUR AGENT OR WRITE TO

Heath & Milligan Mfg Co

Paint and
Color Makers



Chicago
U. S. A.

country to know the character of the paint which he is purchasing. It is a bill that has become known as an honest Paint Bill. Let us hope that this may be enacted into a law for the protection of the American people against the sale of a class of paint products that have become altogether too common during the past few years and which have not much to recommend them.

THE SEASONING AND PRESERVATIVE TREATMENT OF ARBORVITAE POLES

The immense demand for telegraph and telephone poles is one of the heavy drains upon the forests. The cost of maintaining lines is high, and it is getting to be more and more a practice to give poles some sort of preservative treatment in order to check decay and get the fullest service out of them. Arborvitæ, or northern white cedar, is well suited for the production of poles. It grows naturally in suitable form and is strong, light in weight, and durable. In fact, it combines the qualities most demanded. Moreover, it takes preservatives very well.

Unfortunately arborvitæ is not very plentiful, and it grows so slowly that it takes a couple of centuries for it to reach serviceable size. In the last dozen years its price has risen 150 per cent. There are the best of reasons, therefore, for using the present supply as carefully as possible. Our great-great-grandchildren will have come and gone before the seeds now sprouting will be trees ready to cut.

Arborvitæ poles are most easily cut and hauled in late fall and winter. When spring comes they are ready for seasoning, which is done with most advantage during spring and early summer. If peeled and arranged for drying in a single layer, they will be ready for treatment in June.

A fairly good treatment with either creosote or carbolineum can be given by applying the oils warm with a brush. Two coats of carbolineum can be applied for a distance of 6 feet, beginning 2 feet from the butt, for 45 cents per pole. A similar treatment with creosote can be given for 12 cents. Since the average life of an untreated arborvitæ pole is twelve years and its cost set in the line \$9, the carbolineum brush treatment would have to add only one year and the creosote brush treatment only four months to the life of a pole in order to pay for the additional expense.

By means of the "open-tank" treat-

ment with creosote a greater additional length of service can be secured, so that this method is advisable wherever quantities of poles are being prepared for use. The equipment consists of a sheet-iron tank about 8 feet long, 5 feet wide, and 8 feet deep, equipped with steam coils or a fireplace beneath. A small derrick, or "gin pole," may be used to hoist and lower the poles into the tank. The poles should be immersed 7 feet in the creosote, heated to about 220 degrees F., and kept there for

about six hours. The heat can then be shut off and the oil allowed to cool. Several poles can be treated at once, and the cost will be from \$1 to \$1.50 per pole.

Circular 136 of the Forest Service gives a description of experiments in seasoning and treating arborvitæ poles in the upper peninsula of Michigan, together with a tabulation and discussion of the results. This publication can be had upon application to the Forester at Washington.



The highest quality and best paint for all Good painting.

Every drop honest value—every can full measure.

Satisfactory Results Guaranteed

We insure the life of our Paint.

BRADLEY & VROOMAN CO.,
PAINT MAKERS,
CHICAGO.

THE ONLY BARN PAINT

bearing a formula label showing its composition and conforming in every detail to the laws of North Dakota.

PITKIN'S TRIPPLE CROWN BARN PAINT IS GUARANTEED TO WEAR 5 YEARS



The greatest part of the cost of painting is the labor necessary for applying. Therefore it is certainly economy to buy the paint which will wear the longest and at the same time give satisfaction.

Pitkin's is that paint. Pitkin has been making paint for 40 years and has a reputation for integrity and reliability that is in itself a guarantee of the goods.

Be sure to buy the right paint; not the cheapest paint. Send for a free sample.

Geo. W. Pitkin Co.,
Paint and Color Makers,
Benton Harbor, Mich.

Boys Interested in Corn Culture Contests Should Read Personal on Page 3.

It is said that not less than 80,000,000 gallons of ready-mixed paints are annually produced and used in this country. Since these now retail at about \$1.50 per gallon we have by the people of this country an expenditure of about \$120,000,000 each year for paint. It costs as much more to apply these. What do you know about these paints? Are you studying their composition. Is this analysis shown on the can? Are they what they are represented to be in the advertising? If not then can you afford to use them. If the producer does not truthfully represent his goods in the advertising how can you expect him to deal honestly with you.

Much of the harm comes in bad results from the use of paints in the way they are applied. No matter how good a paint is, unless it is put on the building well, bad results are sure to follow. Sometimes you have a dishonest workman who does not try to see how good a job can be had, but rather how easy he can make it for himself. The use of gasoline, benzine etc., should be condemned. The paint should not be applied while the wood is damp, and water should not be in the paint or added to it. Poor paint well applied and rubbed in is better than the best of paint poorly spread.

YOU CAN SECURE A SELF-SUPPORTING HOME

In the glorious Kootenay fruit district, British Columbia, for \$10 cash and \$10 per month for ten acres. (Discount for larger payments); annual profits \$500 to \$1000 per acre. Orchard, garden, poultry, grand scenery, hunting, fishing, abundant pure water, healthy climate, warm winters, cool summers, churches, schools, post offices, stores, daily express trains, lake steamboats within a few minutes walk, fine neighbors, comforts of civilization combined with delightful rural community. Will send maps, photos, plans, proofs free. Refer to banks and commercial bodies, also hundreds of purchasers. Write today. Address, Land Department, Kootenay Orchard Assn., 487 Ward St. Nelson, B. C.

Boys Interested in Corn Culture Contests Should Read Personal on Page 3.



Paint Can Be Easily Tested

Many people do not realize that good paint, the kind which wears and stays bright, is simply *metallic lead* reduced to a form in which it can be applied with a brush. Lead in this form is called "White Lead."

Likewise, many people who *do* know that the best paint is "White Lead and Linseed Oil," mixed fresh for each job by a good painter, are totally ignorant of the fact that much of the paint which they think is "Pure White Lead and Linseed Oil" is so grossly adulterated that if tested it would yield no metallic lead whatever. Such paint will not wear like genuine White Lead, and is very expensive in the end.

We desire to place in your hands, at our expense, the means of telling pure White Lead from counterfeit. Any man, woman or child can make the test—we want you to make it *now*, before spring painting begins.

You need not take anyone's word for paint. Test it yourself. No one else is half so deeply interested as you, if you have to pay the painting bill.

How to Make the Test

Subject the sample of supposed White Lead to the flame of a candle, gas jet or spirit lamp. Intensify the flame by use of the blowpipe. If globules of metallic lead appear, the White Lead is pure. If you can bring out no metallic lead, it shows that the White Lead has been adulterated.

FULL WEIGHT KEGS

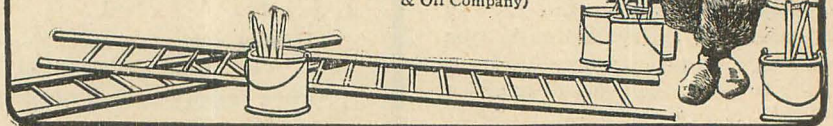
The Dutch Boy Painter on a keg guarantees not only purity, but *full weight* of White Lead. Our packages are not weighed with the contents; each keg contains the amount of *White Lead* designated on the outside.

Write us for Test Equipment ³⁸ and we will send free a blowpipe and detailed instructions for making this test.

NATIONAL LEAD COMPANY

in whichever of the following cities is nearest you:

New York, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Philadelphia (John T. Lewis & Bros. Co.); Pittsburgh (National Lead & Oil Company)



Home Affairs

Katherine C. Neilson, Editor

"Half your wood and half your pay," so says the old saw, but a full crop of dust and soiled curtains. House cleaning is about as necessary in mid-winter as at the close of the summer.

Snow, what a blessing! units of beautiful and perfect crystals piled mountains high!

It covers chaos and dead vegetation and gives our eyes a rest from uncanny views. Ugly weed stocks put on

phantom dress and for once look lonely in frozen den. "A green Christmas makes a fat grave yard."

Nature is so kind to silently cover the new brown graves with the pure white mantles of snow.

Talmage said in one of his sermons on lessons of Winter—"Plenty of snow means public health. There is no medicine that so soon cures the world's malaria as these white pellets that the

clouds administer—pellets small enough to be homeopathic but in such large doses as to be allopathic, and melting soon enough to be hydropathic."

It means greater harvests

Science says that snow contains a larger percentage of ammonia than rain. It is one of the greatest of the world's doctors, a soother of sorrows. It covers many a tragic grave in the Alps and Moscow battlefields and gives silence to strife—snowed under.

Suet

Ten pounds cut in cubes. Let it stand in water 24 hours, drain, place in a kettle with very little water, cover and cook slowly for an hour; then add 1 pint of sweet milk. Stir often to

keep from sticking to the bottom. Do not hurry the rendering, cook thoroly as for leaf lard and strain.

By this process it is white, more pliable, less odor, and superior for doughnuts, mixing with lard half and half, more healthful for cooking and costs half the price of lard. Doughnuts are not as liable to soak the fat.

Old Conn. Raised Doughnuts

- 1 large cup of butter.
- 1 pint of light bread sponge.
- 4 eggs.
- 1 pint of sweet milk.
- 2 cups of sugar.
- 1 teaspoon soda dis. in the milk.

Nutmeg, salt, flour sufficient to knead rather soft but not sticky. Let it raise twice. Then roll out one half inch thick place them on a floured board or large pan to raise as thick again, they will fry quickly and use but little fat.

This will make a large quantity for frosting, roll in sugar as needed. To freshen doughnuts, put them in a covered pan in the oven, then roll in fine sugar.

A cup of coffee with these doughnuts made a breakfast at the Springfield Depot Restaurant in Mass. noted for its raised doughnuts.

German Crullers (Mrs. Rorer)

- 2 eggs.
- 1 cup of sugar.
- 1 tablespoon of melted butter or cottonline.
- 1 cup of sweet milk.
- 2 cups of flour, sifted with baking powder.
- 1 teaspoon of baking powder.

Nutmeg and salt, make a soft dough; fry in half suet and half lard; drain well and lay on to paper.

Uses of Glycerine

For hands, use Bay Rum and Glycerine half and half. May be used after shaving.

Will delay excessive thirst of a fever patient. Two or three drops given to a baby will often stop stomach ache if wind be the cause.

Will moisten and soothe an irritating cough by moistening the throat.

Good for preventing bed sores.

It has been found excellent as an enema in treating constipation, and half a teaspoon every hour has relieved summer complaint, waterbrash and dyspepsia. In household medication it must be pure.

For whooping cough, Glycerine and molasses half and half.

REMINISCENCE OF EARLY NORTH DAKOTA SETTLEMENTS

O. B. Westley, Jessie, N. D.

In the year 558 B. C. Cyrus the Great defeated the rich Croesus. 331 years B. C. Alexander the Great cut thru the

army of Darius on the planes of Arbela thereby preparing the way for Hellenic civilization to spread over all western Asia. In the year A. D. 1492, it is said, Christopher Columbus, the crack-brained fool from Genoa, Italy discovered this great North America. According to this, Leif Erickson, the Norwegian fish or fisher, is not in it. But when the year A. D. 1776 is mentioned, we all feel like shouting at the top of our voices: "Hurrah for Uncle Sam."

Nearly one hundred fourteen years later, or in 1880, the Messrs. Davison, Page, Fitch and Chalmers settled on the banks of the Sheyenne River, about 35 miles north of the little town of Valley City, Dakota territory. The purpose of this quartette was to find a suitable place to build a home for their families where their children could get the benefit from hunting gophers and shooting rabbits, meanwhile studying music at the feet of the Gigantic Oakes of Sec. 15. After New Year or, rather, early spring in the year of 1881 a sextette from Filmore County, Minn., followed, but instead of stopping on the river, struck farther west where they found a promising flat on which they hoped to raise No. 1 Hard wheat for the Duluth and Minneapolis markets. If you wish to know this sextette, I need only to mention the names of Christian Lea and F. Greenland (1st Tenors), Edward Stai (2d Tenor), M. E. Fjeldstad and Simon Ouren (1st Bass) and Old Henrick Johnson (2d Bass). These men are all wide awake yet, but I have not heard them sing lately.

While these men were yet building their homes from prairie sod, etc., another band of Yellow Medicine Men (they came from Lyon and Yellow Medicine Counties, Minn.) plodded their way thru the mud of May and on the 15th day of June 1881 pulled up on the Sheyenne River and built a log hut about one mile west from the present site of the Gallatin school house. This octette consisted of the following: Chr. Arestad and Sven Loge (1st Tenors) Sven Lunde and Martin Ueland (2d tenors) Betuel Horigstad and Waldemar Kluffen (1st Bass), O. Westley and Karl Herigstad (2d Bass).

Musical instruments were not common until Hans Braasten brought his old violin on which he could play very touchingly such glorious melodies as "Ro Ro Baltonskjor". This lonely violin received more than one loving caress, and was hugged by even the least music loving. When Torkel Fuglestad in 1884 brought his 100 year old Bjerkrei violin and played his skilful trills and tunes from Ole Bull, Hans Braasten must have felt a little at naught, for after that he was seldom heard to play. Two is company, but three makes a crowd that will be heard from. But let

us leave for a moment the two lonely fiddles and follow the bent of the men.

I have said nothing of any women so far. But you may be sure that where men break the way, the women are bound to follow every time. With the long winter evenings came the time to think and talk over past troubles and victories. They liked the prairies in summer for then with a yoke of oxen they could behind the breaking plow by slow process convert the monotonous green to spotted black on the beautiful background of emerald; and in winter they gathered logs and fuel and did their chores in day time and when evening came, gathered around the sputtering logs, telling stories while eating baked potatoes. But the altruistic and aesthetic men and women are not contented unless let loose in some field of self-culture. This was soon brought about when Halvor Arestad began a course of English at Evening Schools, held some-

Hundreds are using Personal, page 3.

"Everhart's

Candies are

PURE."

FREE

To School Directors.

To introduce the Rotary I will send free five copies each month for three months to any subscriber of the North Dakota Farmer. The Rotary is now read by 25,000 North Dakota children. Try it in your school.

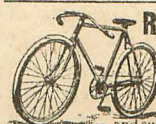
Address, W. G. CROCKER,
Lisbon, N. D.

THERMOMETERS FOR FARMERS, tested and guaranteed. Self registering Minimum. Registers 40 degrees below to 120 degrees above zero. Hard wood backs. Eight-inch \$1.50; twelve-inch \$2.25 postpaid. Money back if not satisfied. **WILLOBANK FARM**

Larimore, N. D.

Choice Alberta Farms for sale or to rent—657 acres all in one block. 150 acres broke, two-thirds of the section fenced. Two never failing wells with good water. Three frame houses, two granaries, Four Stables and other out buildings. Ten miles East and two miles South of Didsbury town and station. Post Office, store, creamery, etc. 1-2 miles distant. Price \$18 per acre for the block or separate sections. Easy terms. Apply to

LEONARD L. BISSELL
Neapolis, Alta.



RIDER AGENTS WANTED

In each town to ride and exhibit sample Bicycle. Write for special offer. We Ship on Approval without a cent deposit, allow 10 DAYS FREE TRIAL and prepay freight on every bicycle.

FACTORY PRICES on bicycles, tires and sundries. Do not buy until you receive our catalog and learn our unheard of prices and marvelous special offer. **MEAD CYCLE CO., Dept. E 240 Chicago, Ill.**

times at his home, other times at the homes of the pupils. But, alas! What a class. Spelling and pronunciation were the chief subjects. "Know" they pronounced as "Cnowe"; "through" (trug), "day" (dic) "nice" (neighs). So when they met on the road one would say: "Halo, neighs die". But they very soon discovered the crookedness of English spelling. Singing was a prominent feature of these gatherings, and such songs as "Ho! My Comrades," "O, Think of the Home," "Hold the Fort," etc., were practiced and mastered till the bleak prairies rang with merry song.

The violins, two already mentioned, began to talk when a third arrived in the hands of Christ Ashland, who had been commissioned to recross the Atlantic and tell the folks of Norway of the wonderful success and growth of the new settlement. He did not return with a load of women as some of the New Englanders in early days did, but instead, brought a good violin. Being a young man of merit, he naturally spotted some relative of a person he liked and left his instrument with a young fellow named Hans. Hans fell in love with the instrument and set out in earnest to learn its secrets. But while he was busy in the field, the younger tots coaxed the mother to let them try the wonderful music box, and the consequence was that Hans had to hustle to cope with the kids. But as Hans fell in love with the violin, Ashland fell in love with Hans' sister. The end of it was that Ashland married Hans' sister and Hans was left without both. But he was not discouraged. He was able to buy a \$5 instrument of his own, and when his kid brother got a second-hand fiddle, they were soon able to convince Old Man Erick Nelson that the violin was not the abode of devils as he had supposed. For when crossing the ocean this man had actually purchased a violin and smashed it to pieces, evidently thinking that by so doing he had done away with several black fellows.

A choir of about twenty voices which was organized with Mr. Ashland as leader became quite famous. In the summer of 1887 they went about 12 miles north from the six-year old Coopers-town where another settlement had seen similar days. This was an interesting trip and so successful that later they undertook a journey to Mayville in Traill County and were ever greeted with enthusiasm and admiration. It would be interesting to follow the developments from that period to the present time noting the different elements that have worked together up to the birth of the Home Orchestra, but time does not permit such an undertaking now. Sufficient to say that many have been the enjoyments in Sverdrup Twp., and not the least the music from the well

known but now shattered Gallatin String Band. When in about 1891 the guitar was introduced, wonderful dormant powers were brought to life and people learned to understand what time in a piece of music meant.

Another interesting phase of the public would be to note the different religious trends or branches as well as a careful glance over that part of the society apparently devoid of religious thoughts and ideas. Let some one who is skilled in depicting characters take up the pen and let the present and future profit by a glimpse over the past.

TRADE IN LIVE STOCK

STRONG TONE TO KILLER PRICES

Run Rather Light—Hogs Ruled Steady
—Run Moderate—Sheep, and
Lambs Steady.

South St. Paul, March 19.—Receipts at the Union stock yards today. Cattle, 515; calves, 102; hogs, 3,140; sheep, 317; horses, 13; cars, 56.

The following table shows the receipts from Jan. 1, 1908, to date:

Year.	Cattle.	Calves.	Hogs.	Sheep.	Cars
1908	49,503	8,130	376,833	59,630	6,266
1907	41,300	7,635	208,485	39,529	4,438
Inc.	6,203	295	173,384	20,101	1,828

The following table shows the receipts thus far in March, as compared with the same period in 1907:

Year.	Cattle.	Calves.	Hogs.	Sheep.	Cars
1908	14,481	2,556	66,234	17,698	1,355
1907	11,159	2,313	39,258	5,606	903
Inc.	3,322	243	26,976	12,032	362

Official receipts for the past seven days were as follows:

“NEVER-SLIP”

COLLARS

Made to fit well, wear well, work well. So stuffed that they form a very elastic pad which fits the horse's shoulders and neck without causing sores or galls. The whang-sewed rolled-edge on the front of collar is so shaped that the hames can not slip off the collar no matter how much too big they may be. Felt-protected seam on outer edge—felt takes wear off seam. Made of russet leather, cut from center of whole hides, the "Never-Slip" gives you more wear, more work, more comfort, with less bother than any other collar on the market, and you pay no more for it. See it at your dealer's; if he does not have it write direct to us and we will send our harness-book free. Write today.

SCHAEFFER & ROSSUM CO.,
238 E. 4th St., St. Paul, Minn.

March	Cattle	Calves	Hogs	Sheep	Cars
11	558	136	4,745	1,214	78
12	609	157	4,840	469	77
13	496	83	4,182	505	68
14	215	39	3,972	1,798	62
16	1,554	221	2,365	132	82
17	1,923	420	4,947	435	120
18	737	167	3,571	1,002	73

Rather light run of killing cattle today and quality was nothing extra, common to medium kinds predominating. Demand continues good and a strong tone was evident today. Veals were steady with yesterday. Run light and quality fair. Stocker and feeder trade and small supply to work on today. Trade continued good and prices were well maintained. Salesmen generally quote the stocker and feeder market 10 to 15 cents higher than last week's best time. Representative sales:

HOGS

The following table shows the weight, cost and price range of hogs for the past seven days:

Date—	Av. Wt.	Av. Cost	Price Range
March 11	191	\$4.35	\$4.30 & 4.45
March 12	189	4.43	4.30 & 4.50
March 13	186½	4.41	4.30 & 4.45
March 14	187	4.43	4.35 & 4.50
March 16	176	4.43	4.25 & 4.50
March 17	180	4.57	4.40 & 4.60
March 18	183	4.70	4.55 & 4.80

SHEEP

Quotations: Shorn Sheep and Lambs, Lambs, good to choice, \$6 & 6.25; ewes, good to choice, \$4.75 & 5.25; yearlings, good to choice, \$5.75 & 6; wethers, good to choice, \$5.25 & 5.75. Woolled Sheep and Lambs—Lambs, good to choice, \$6.60 & 7; yearlings, good to choice, \$6 & 6.50; ewes, good to choice, \$5.50 & 6; wethers, good to choice, \$6 & 6.50; bucks, good to choice, \$3 & 4.50.

Sheep receipts today 317 head, mostly feeders. Last Thursday the run was 1,214 and this day last year 2,057. The market was quotable steady with yesterday and the small amount of butcher grades was soon cleaned up. Representative sales:

KILLING SHEEP AND LAMBS

No. Kind.	Weight.	Price.
62 lambs.....	80	\$6.50
10 cull lambs.....	69	5.75
6 cull lambs.....	55	4.75

HORSES

Eastern buyers put life into the horse trade today with a demand for good rugged horses. Farm stuff continues popular and inquiry in other lines is favorable.

Drafters, extra	\$160 & 240
Drafters, choice	130 & 170
Drafters, common to good....	75 & 125
Farm mares and horses, extra	150 & 175
Farm mares and horses, choice	110 & 160
Farm mares, common to good	60 & 120
Delivery horses, choice	120 & 200
Drivers and saddle horses....	125 & 225

Shade Trees and Gardens.

C. B. Waldron, N. D. A. C., Editor.

TREES! TREES!! TREES!!!

C. B. Waldron

(Continued from February Number)

Whatever fuel is used a certain proportion of wood, especially for farm use, seems almost a necessity at certain seasons of the year. The amount of wood consumed for fuel in North Dakota is much greater than one would suppose, taking into consideration the fact that our state has a smaller proportion of natural forests than any other state. Most of this is, of course, shipped in from Minnesota tho our own scattering forest growth has been set upon without mercy for fuel supplies till but a miserable remnant remains. The supply from outside sources is also nearing its end.

Stations within fifty miles of Fargo on the east that a few years ago furnished large quantities of wood for shipment are themselves buying wood from more eastern points while a large part of the wood shipped into North Dakota now comes from points east of Brainerd.

In the last five years, the price of wood in Fargo has increased from fifty per cent on the better grades to seventy-five per cent on elm, tamarack, etc.

It might not be worth our while to consider these matters and dwell upon them except that it is not only possible to meet the conditions that confront us but to find profit in doing so. It is the part of ordinary precaution and business foresight to know about what confronts us in the immediate future in the way of timber scarcity and to determine if there be any practical way to prepare for it.

We have called attention to the rapidly growing timber for fuel, posts and miscellaneous uses. The timber supply proper is a matter of still more serious concern. To show that we can take steps to meet this condition, let us consider the fact that in Iowa, Nebraska and even in South Dakota there are saw-mills today cutting lumber for men who themselves planted the trees twenty-five and thirty years ago. These trees saw 200 feet each and allowing them to stand 16 feet apart each way the money value of the timber aside from the cost of the sawing is \$650 per acre. Counting the period of growth as 33

years the return upon the land is almost exactly \$20 per acre per annum. Later, we will give some further figures on timber culture based upon actual results. For the present it might be well to consider the need for such an undertaking wholly apart from the matter of profit.

Until recent years all of the lumber for this region has been furnished by the states of Minnesota, Wisconsin and Michigan. Even now tho considerable coast lumber finds its way to our markets the price is fixed by the nearer source of supply. The total cut of pine from these three states in 1899 was 5,941,002,000 feet. Six years later in 1905 it was 3,777,458,000 feet, a falling off of over thirty-five per cent.

The original stand of pine in these three states was 350,000,000,000 feet. The present stand does not exceed one-tenth of that or 35,000,000,000 feet. At the present rate of cutting this will last six years. As the amount cut each year is somewhat less it may last ten years but at a constantly augmenting price. During the six years prior just named the price of clear white pine f. o. b. Buffalo, N. Y. increased 85 per cent while the choicer grades of the earlier years are not now to be had at any price.

If time permitted we could draw a most striking lesson of criminal folly in the ruthlessness with which these matchless forests were disposed of. It has occurred within memory of this present generation and many of us have been eye witnesses of the scenes of pillage and wanton destruction. It is useless to blame any one class or interest, even the lumbermen for these things. They were but part of an infamous system, the net result of which was the destruction of the most magnificent body of white pine to be found upon the globe and whose equal in poorest degree will never again greet the eye of covetous and destructive man.

These forests grew for the greater part upon land having but slight agricultural value. One good pine tree today of the size of the monarchs of twenty years ago would have a greater market value than ten acres of the land upon which the forests grew. For all this vast body of

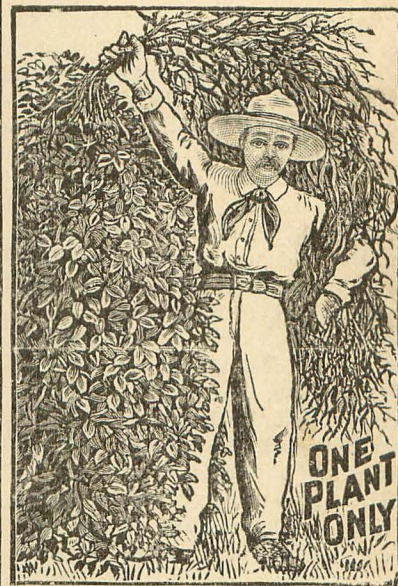
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Aster, 16	Poppy, 13	Portulaca, 20
Pansy, 10	Candytuft, 10	Four O'clock, 13
Phlox, 10	Sunflower, 2	Marigold, 13
Sweet Peas, 10	Zinnia, 12	Petunia, 10
Salvia, 2	Larkspur, 6	Sweet Alyssum, 10
Balsam, 12	Verbena, 10	Nasturtium, 10
Pinks, 10	Forget-me-not, 10	Calliopais, 8
	Sweet Mignonette, 10	



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Handlers of only Northrup, King & Co.'s Sterling Seeds. We buy Timothy, Millet, Flax, Barley, Speltz and Wheat.

pine the government never received a dollar. It passed into the hands of the spoilers for the pitiful compensation of a dollar and a quarter or two dollars and a half an acre, this being considered payment for the land itself and the condition under which title passed to the private owner.

Had this magnificent timber domain been reserved by the government or by the states themselves, and had the trees been cut only as they reached maturity, taking care to protect from fires the younger trees, this region would have been a source of vast wealth for ages to come instead of the barren and neglected waste to which it has, in large part, been reduced. It is useless to lament past conditions now or even refer to them, except for the purpose of showing how inconsiderate and short-sighted men are, even when dealing with matters that affect their own interests. This costly and irreparable folly of the past should assist us in making us more alive to our interests now. We have seen how the great natural timber supply lying at our very doors has been exhausted, saving only the last ten per cent that is doomed to follow within the next ten years. It is late enough in all reason to begin to make provision for the conditions that surely confront us. The few who sounded the warning years ago of the disaster that awaited our forests were wholly unheeded or their warnings were ridiculed as coming from sentimental and impractical men.

The day is at hand when a heedless nation will have cause to remember these warnings in all regret and bitterness, as she sees one industry after another crippled and abandoned thru lack of an adequate and suitable timber supply.

It ought to be pretty well agreed by this time that these words of warning were not uttered by alarmists and visionaries but by those who were practical in the deepest and fullest sense.

If we have lingered long enough in our folly let us forsake it and seek a better and more profitable and patriotic course.

Three methods of procedure are possible and all should be followed to the fullest degree possible. They are, first the establishment and maintenance of national forests; second the establishment of state forests and, third, planting by private land owners.

The area already set aside for national forests is about 148,000,000 acres or something over three times the area of North Dakota. It includes many tracts that are not covered by forests some of which will in time be planted. The reservations have been made almost wholly in the Rocky mountain region in the states of Washington, Oregon, and California with lesser tracts in adjoining states.

6

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HANKINSON, - - - N. D.

The time was when great objection was heard upon many sides to the setting aside of public lands for forest reserves as they were then called. There are few who question the wisdom of such a course now and it is safe to say that our national policy in this respect will find ample support from now on.

The only part that we as private citizens can take in this matter is to urge our representatives to support national forest measures liberally and especially to use their influence to secure the actual planting of trees as rapidly as possible. Unfortunately, none of these national forests lie close to our own region but it will be better to be able to get lumber from them with the additional cost of high freight charges than not to get it at all.

The matter of establishing a national forest in the Turtle Mountains was considered at one time but so much of the land had already passed into private hands that it was not considered practicable. Our executive, Governor, John

Burke, has suggested the Bad Lands as a possible suitable region for establishing a national forest. This could be looked over with that end in view.

State forests have been set aside by some of the eastern states as well as by some of the western coast states and also some of the central states including Minnesota. These are supposed to be operated for the most part after the manner of the national forests, using the trees as they become of merchantable size and encouraging the growth of the young trees of the more valuable species.

The matter of state forests has never been agitated and the proposition would doubtless meet with many difficulties. It might be considered feasible to plant some of the school lands to forests particularly those sections having but little agricultural value but supplied with moisture sufficient to make a good timber growth. There is no doubt but what the value of some of these lands could be greatly enhanced by establishing forests upon them. If this pro-

cedure is at all possible it should be gradually put into operation.

The planting of forest trees by private land owners has not generally been an alluring proposition. The comparatively low price of lumber and fuel has been doubtless the chief deterrent.

One also naturally hesitates to take out of his farm a certain number of acres of land that is bringing a definite income each year and devote it to a purpose such that the income will be deferred for many years and even then be not assured.

It is true that each one must carefully consider his individual conditions and his own likelihood of success. There are many so-called groves in North Dakota which have been standing for twenty years or more that are actually worth less than nothing. One could afford to give the timber and a fair price beside to have them grubbed out. Such examples in practical forestry are not likely to arouse much enthusiasm on the part of the planter. Still it is possible you fail in almost any undertaking, if ill-advised and poorly considered plans be persistently followed.

It goes without saying that men have failed and can fail in tree planting, as in other things. The question confronts us at the present time is this: Is tree planting of any kind profitable for the average farmer in North Dakota and if so what kind of planting will give the surest and most satisfactory returns. Are the returns sufficiently quick and certain to warrant planting at all and if so what is to be the character of the planting? These are questions of the highest economic importance and judgment should be passed upon them only after due study and consideration.

This part of our problem is certain: timber of all kinds in the immediate future will have a value based upon its growing scarcity. Our own timber must either be grown here or shipped long distances. Which course is the more profitable to the timber user? This question must be considered from the standpoint of fuel, of lumber and of timber for posts, poles and miscellaneous uses.

(Continued in April Number.)

HORTICULTURAL NOTES

F. R. Simons, Wogansport, N. D.

Location

Locate your fruit garden as near the house as possible, so that it will be easily accessible for procuring, in their season, a fresh supply of fruit for each meal. When thus located spare and idle moments may be spent in remaining the imperfect fruit and in shaping and trimming the trees and bushes and in culti-

vation, so as to make them as fruitful as possible.

Fruit can be grown successfully and profitably anywhere in North Dakota where grass grows. Remember that when you sell fruit you sell water. Therefore the higher and drier and more rolling your location, the wider apart you must set your rows of trees, in order to give greater space for the absorption and storage of the necessary moisture.

Plan

Uncle Sam's tree claim law demanded that trees shall be planted four feet apart each way. This imposition caused the failure of tree claims. It is impossible to successfully grow trees or fruit in the Missouri Valley or on the divides in North Dakota by level culture.

The early settlers were too busy doing something that brought in the necessities of life, to cultivate and hoe the trees at the right time. Consequently the groves were soon filled with grass and weeds. Grass and weeds grow like magic in North Dakota. Later when time was secured to cultivate, the cultivator rode over the dense growth and could not root it out. Soon the trees were standing in a dense sod that sucked every drop of moisture from the ground. How could the trees live?

If the law had provided that the trees should be planted in long rows running north and south, twenty feet apart, the settlers could at any time have gone in with a team and plow and destroyed the sod. If some of the grass still remained in the row, moisture and plant food would have been secured from the cultivated soil until the trees had made enough growth to smother out the grass and weeds.

Laying Out the Fruit Garden

The fruit garden should be long and narrow so as to be easily and quickly cultivated. The width of the space between the rows of trees should be great enough so that the roots of the full grown bushes or trees will not mingle between the rows. A little space must be left to store moisture. The wider this space the more prolific, larger and more perfect the fruit will be. When planted in this way the trees will produce seed to seed the unoccupied ground. Nature will not let the soil long remain without some covering, either of grass, weeds, or trees.

Even the small fruit in our dry climate should be planted in rows far enough apart to admit the use of the plow and harrow if the greatest success is to be attained.

Preparing the Growth

Stake out the fruit orchard in long perfectly straight rows, running north and south, conforming to the section line, having the rows even distances

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apart thruout. Two years previous to planting, as soon as the crop is removed, back furrow between the rows so as to leave a dead-furrow exactly where the rows of trees are to be planted. Go back and forth in the bottom of the dead furrow ripping up the subsoil as deep as possible. Every time the land is plowed turn the furrows the same way and subsoil in the same manner. Always keep in mind that the higher the ridge between the rows and the deeper the furrow where the trees are to be planted, the better. This is the secret of successful and profitable fruit culture in the Missouri Valley and divides.

This insures against early and late frosts and winter killing. It holds back the blossoms in the spring thus escaping late frosts. It hurries the ripening of fruit before frost in the fall on account of the coolness about the roots. The moisture about the roots of the trees keeps the ground from sudden freezing and thawing preventing root killing. It causes the trees to make an early and uninterrupted, vigorous growth of wood and fruit. It causes the bark and buds to thickly coat themselves with a waxy cuticle, a non-conductor of cold and heat, changes which destroy the life of the buds and bark.

The first killing frost followed by bright sunshine finds the leaves filled with moisture, preventing them from hanging on the unripened twigs during

the winter. The early frosts simply act as a warning to ripen the wood and buds.

Any one doubting these statements should visit the native wild fruit patches. They will be found without a single exception growing in the deepest gulches, ravines and coolies. You will find they never grow on the southern and southwestern slopes where the intense rays of the sun shining thru the clear atmosphere beats against the ground about their roots. This drying effect is a cause of certain death.

Frequent cultivation should be given before the trees are planted to conserve moisture and to make the weed seed germinate when the young plants can be easily killed. The trees should be given good cultivation until large enough to shade the ground and afford protection from the drying effect of sun and winds and to prevent all growth of grass and weeds.

The preceding article by F. R. Simons was written for the State Horticultural Society at the request of the secretary. While some of the statements do not conform to the opinions of the secretary, and most horticulturists will take exception to them, they are worthy of consideration. Other opinions will be as gladly received.

The general opinion is that level culture is best for any crop, whether of trees, fruit or grain. The relative merits of surface soil and subsoil is well understood. Few people believe that spring growth can be retarded by keeping the soil frozen about the roots of the trees. Nevertheless the article has been presented in its entirety for the consideration of the North Dakota Farmer readers.

O. O. Churchill, Sec. N. D. Hort. Socy.

HARDY PLUMS FOR NORTH DAKOTA

W. R. Lanxon, Student in Hort. N. D. AC.

Very few people in the state realize that plums can be grown successfully as far north as North Dakota. There are several varieties that do exceptionally well, are perfectly hardy and are deserving of cultivation. Plum trees grow and thrive best on a clayey soil, but can be grown quite successfully on any land that has a clay subsoil.

A great many people will come forward and say that they have tried plums and that they will not grow in North Dakota. This is no argument. These people have been persuaded by unscrupulous nurserymen and agents to buy stock that is not hardy in the Northwest. The writer has knowledge of fruit trees sold in the state that were not even hardy in the New England states.

The North Dakota Agricultural College would gladly have given such

purchasers full information that would have saved them a great deal of money as well as a lot of unnecessary labor.

Several years ago Mr. Waugh, an authority on plums and plum culture, wrote the plum growers of North and South Dakota and Minnesota asking their opinions on a number of hardy varieties suitable for culture in the three states. The following varieties received an almost unanimous vote—De Soto, Forest Garden, Wyant, Quaker, Wolf, Rollingstone and Hawkeye. These varieties have been growing at the station gardens in Fargo for the past ten years, and have proved exceedingly productive, so much so that several times the fruit has had to be thinned to prevent the branches from breaking down, and almost every season several of the trees are supported by timber frames to help them carry the load of fruit.

These varieties are descended from the native wild plum which grows so abundantly along the banks of the creeks, and rivers, or are crosses between that and the "Chickasaw" plum, or the wild plum of the southern states. These cross breeds are very hardy and can be grown in any region where the native wild plum grows. A description of the above mentioned varieties may perhaps be useful as a guide to prospective buyers of this class of fruits to give them an idea of the size, color and quality of fruit produced.

De Soto—Fruit oval and of medium size; color, orange heavily overlaid with crimson; flesh yellow; quality unsurpassed; ripens early; exceedingly productive and valuable commercially; trees bear fruit when five years old.

Forest Garden—Very much like the De Soto; fruit large; color, purplish red orange; flesh yellow and slightly reddened next the stone; very good quality; a favorite and valuable variety; ripens in August.

Wyant—Fruit oval and of medium to large size; pinkish red in color; flesh firm and yellow; a very strong grower and very productive.

Quaker—An excellent variety; fruit large and oval and dark red; very good quality; regarded by many as the best variety for Northwest planting.

Wolf—Fruit oval and of medium size; color crimson; quality good; early; a good grower and productive.

Rollingstone—Spherical fruit; medium size; and dull red color; good quality; sweet; a very good variety; ripens with De Soto and Forest Garden.

Hawkeye—Fruit roundish oval; size large; good quality; ripens with De Soto.

Another cross that is excellent for planting in North Dakota is the compass cherry, which is a cross between the common sand cherry and native wild plum. This cross is exactly intermediate between the two parents. It



Kitchen Garden for 10¢

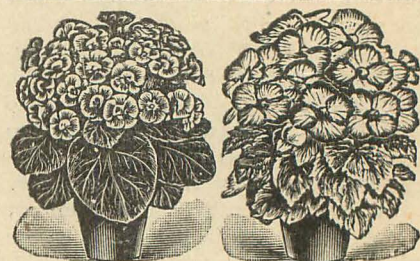
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Russian Willow, Laurel-Leaved Willow, Cottonwood and Carolina Poplar Cuttings at \$2.50 per thousand. Pride of the North Seed Corn \$2.50 per bushel. Freight or Express. Bags and packing free.

Early Minnesota and Golden Bantain Sweet Corn per quart prepaid 40 cents.

THE VOLIN NURSERY,
Volin, S. D.

comes into bearing in three years and is exceedingly productive, very often killing itself by over-bearing. The fruit is very rich and melting and ripens fairly early. No fruit garden is complete without the compass cherry.

The price of trees varies with the age. Three-year old trees usually cost about fifty cents each. It is to be hoped that a great many farmers will plant a few trees of the above named varieties the coming spring, for by so doing they will not only benefit themselves, but the state as well.

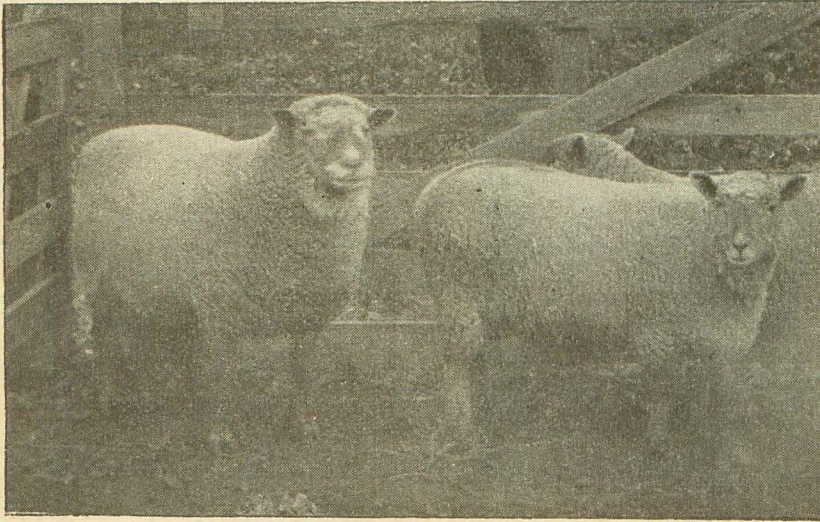
Livestock Department

PROF. W. B. RICHARDS, Editor

BREEDS OF SHEEP ADAPTED TO NORTH DAKOTA CONDITIONS

What was once distinctly the ranch-portion of North Dakota produced thousands of sheep because conditions were found well adapted to sheep husbandry. The experience of the in-

business in the production of pure breeds of these breeds to furnish breeding stock to the farmers of the state. I trust that the description given, studied in connection with the illustrations that accompany this discussion will enable the reader to become fairly familiar at least with these breeds.



Pen of Grade Shropshire Wethers, Shown by the Wisconsin Col. of Agr. at the International of 1907.

dustry which once flourished in that part of the state demonstrated that sheep could be raised under ranch conditions as successfully in North Dakota as any other place. If they can be raised under ranch conditions successfully, we can be assured that they are profitable to rear under farm conditions. If we consider the nature of our conditions and the crops grown on the farms of the state it is evident that sheep raising should be a paying business. In fact, the writer is of the opinion that sheep raising will prove to be one of the best classes of live stock to produce considering our climate and crop productions.

Our farmers are beginning to appreciate this fact and many are starting to raise or handle sheep. The writer finds that many are at a loss to know what breed of sheep they had better raise or in other words rams of what breed they had better use to grade up their flock for the production of the best results. For that reason I have deemed it advisable and possibly profitable to our readers to give a description of the characteristics and adaptability of the breeds of sheep which I consider best suited to our conditions. There is a great opportunity to enter a profitable

business in the production of pure breeds of these breeds to furnish breeding stock to the farmers of the state. I trust that the description given, studied in connection with the illustrations that accompany this discussion will enable the reader to become fairly familiar at least with these breeds.

demands. The best representatives of the breed are broad and compact and symmetrical standing on rather short legs. It is characteristic of the Shropshire to be more perfectly developed in the fore quarters than in the hind quarter fact, their fore quarters conform more closely to the type desired than do the similar parts in any of the other breeds. They have broad breasts with the brisket projecting well forward; short thick necks blending nicely with the shoulders and large full chests or well developed crops. They are too frequently somewhat light in the thighs and rumps, especially in comparison to the character of their fore quarters. Mature ewes should weigh from 150 to 160 pounds and the rams 200 to 225 pounds.

Distinguishing Features. They have dark brownish legs, face and ears. Wool should cover the face and extend down the legs. Their ears are short, blunt and fine and the forehead broad, head short and broad at the muzzle.

WOOLING QUALITIES. They will shear on the average 8 to 9 pounds of unwashed wool. The staple is medium in fineness, length and density.

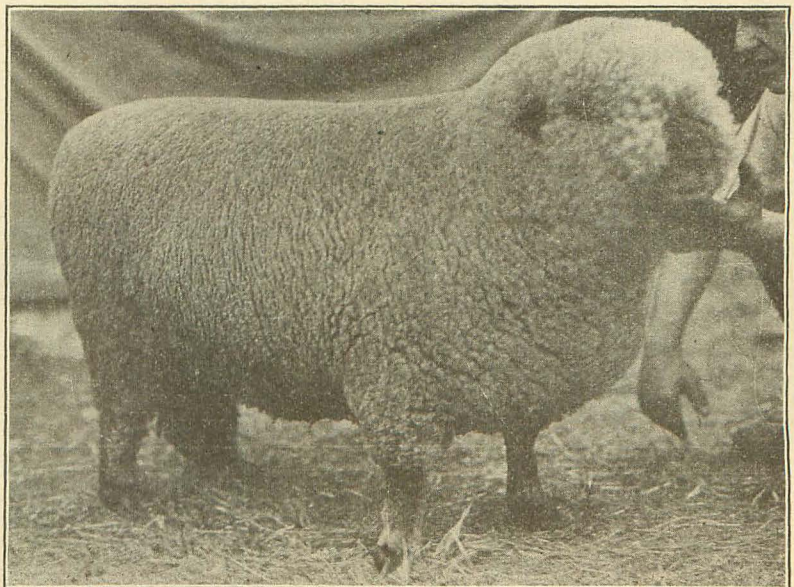
ADAPTABILITY. This breed is no doubt the most widely distributed mutton breed of sheep. It is very popular in nearly every section where diversified farming is practiced. Their general popularity can be largely attributed to the fact that they combine good mutton qualities and very good wooling qualities.

The Oxford

CHARACTERISTICS. This breed is also classed as a medium woolled breed. The Oxford approaches the true mutton type quite closely, as he is a deep, thick, compact sheep, but possibly stands a

The Shropshire

Characteristics. This breed is classified as a medium woolled breed. They possess what is considered a good mutton form and conform well to market



First Prize and Champion Two-year old Shropshire Ram, Owned and Exhibited by Geo. McKerrow & Sons, Pewaukee, Wis.

little higher on legs than the Shropshire. They do not possess as much quality as the Shropshires for they are coarser in bone, and in fact, coarser thruout, as a result they are a large breed. Mature rams will weigh from 275 to 300 pounds and the ewes 175 to 200 pounds. Many farmers prefer this breed to the Shropshire because of their greater size, especially when they are used to grade up flocks Merino or common ewes.

tinguished from the Shropshire and Oxford by their heads and fleece without much difficulty.

WOOLING QUALITIES. They do not rank high as shearers. They will produce about seven pounds on the average. Their fleeces are coarser than the Shropshire fleece and not as long as the Oxford.

ADAPTABILITY. This breed proves very well fitted to cross on com-

sized breed, larger than the Shropshire and about equal to the Hampshire. The mature ewes weigh about 175 to 200 pounds and the rams 200 to 225 pounds.

DISTINGUISHING FEATURES. They can be distinguished from the Hampshire because they have no wool on the forehead. Otherwise their head is very similar for it is black. The legs are black and free of wool, below the hock and knees.

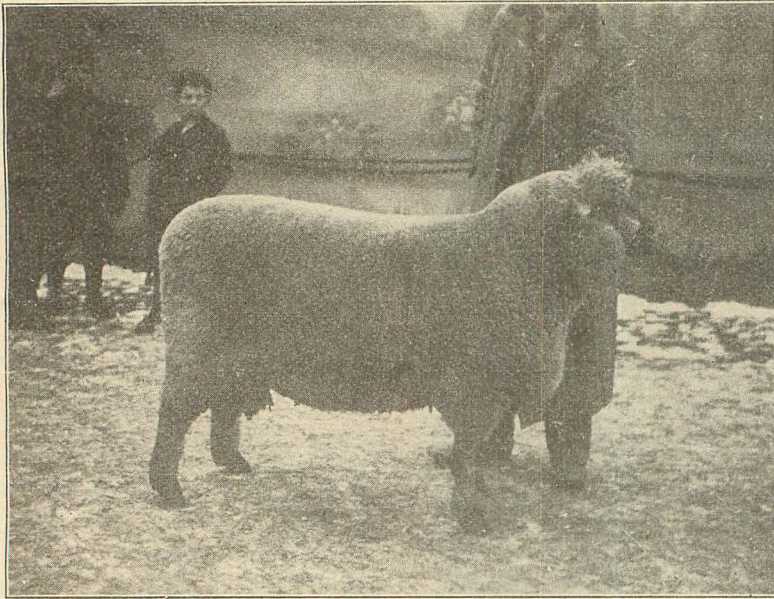
WOOLING QUALITIES. They do not shear as heavy as the other breeds discussed, because the fleece is shorter and lacking in density. They are spare of wool underneath as a rule. Regardless of these objections they compare quite favorably with the Hampshire in wooling qualities.

ADAPTABILITY. They have not been so extensively raised in this country as the other breeds, but judging from their characteristics they should prove quite well adapted to most sections of this state unless it is that they may not shear quite heavy enough. I think, however, they would counteract the defect somewhat by their superior grazing and rustling qualities, which are characteristic of them.

The Southdown

CHARACTERISTICS. This breed possess the most typical mutton form of any of our breeds of mutton sheep. As a result of this they dress out a higher per cent of high grade meat and please the butcher and the packer the best. They are a small, low down, blocky, compact sheep. They have short thick necks, which blend well with the shoulders. They possess wide rumps, deep and full thighs. The flesh is very smooth and firm. Mature ewes will weigh only 120 to 140 pounds, but the breed weighs extremely well for its size.

DISTINGUISHING FEATURES: Their faces and legs are gray or mouse colored; the wool extends down over the forehead only and as far as the hock



Prize Winning Oxford Ram, Owned by Geo. McKerrow & Sons, Pewaukee, Wis.

DISTINGUISHING FEATURES: At a superficial glance they resemble the Shropshire. They are hornless, have a dark brown face and legs, are wooled on the forehead, but not on the face. They have larger ears than the Shropshire.

WOOLING QUALITIES. They will shear on the average about 10 pounds of unwashed wool. The fibre is coarser and longer than the Shropshire and also the fleece is more open.

ADAPTABILITY. The breed is increasing in popularity in this country and it is well adapted to conditions similar to those in this state.

The Hampshire

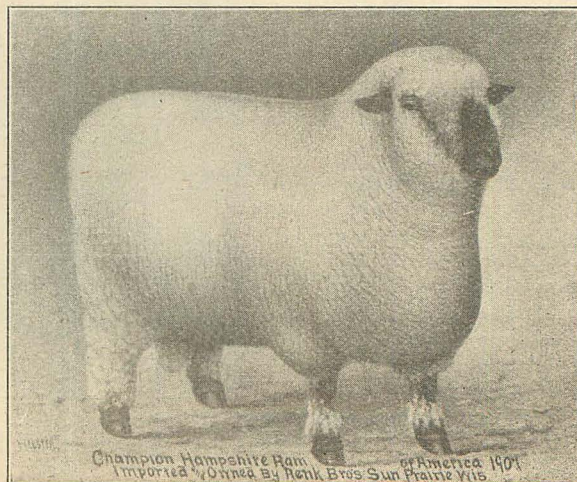
CHARACTERISTICS. This breed is also classified as a medium woolled breed. They are large and somewhat up-standing and for that reason they do not conform as closely to the true mutton type. They possess very broad, well covered backs, altho the criticism is made against them, that they drop somewhat behind the shoulders. Their necks tend to be somewhat long and narrow. They, however, are a very active breed.

DISTINGUISHING FEATURES. The head and legs are black. They have a Roman nose as a rule. The ears are large. They are wooled over the forehead only. There is practically no wool on their legs. They can be dis-

mon ewes for the production of good market lambs. They are considered good rustlers and possess hardy characteristics which is a point somewhat in their favor.

The Suffolk

CHARACTERISTICS. This breed is also a producer of a fleece of wool medium in fineness. It resembles the Hampshire very much in conformation or form. They are quite compact, but also somewhat high on legs. Their necks are a trifle long. It is a good



and neck. Heads should be short and compact with considerable width of forehead. Ears are of medium size and carried alert.

WOOLING QUALITIES. They are subordinate in this respect. They will only shear on the average, about 5 pounds. The staple is rather fine but short and not any too dense.

ADAPTABILITY. Their lack of size would interfere with their profitableness under our conditions, and also the fact that they are light shearers. They are best adapted to sections where a premium will be paid for mutton of a superior quality.

CARE TO GIVE RAMS

Prof. Thomas Shaw

The management that should be given rams, young or old, before and after service will depend largely on the size of the flock. If a strong, well-grown ram lamb runs with a flock of eight or ten sheep which have an ample provision of variable pasture the two may run together during the season of service and it will not be necessary to feed grain. The same will be true of a vigorous shearling ram running with a flock of, say, 12 to 20 ewes. But should the number of the ewes be increased beyond the limit named, then the management should be approximately as stated below.

The rams should be confined to a stable or shed having at the same time access to a paddock. They should be fed good hay and some good green food such as rape or cabbage. They should get in addition from one to two pounds grain per day, according to the service exacted of them, and an ample water supply. Half the grain by bulk may be composed of bran, the other half being almost any kind of grain, but preferably oats or wheat.

The ewes should be driven to a yard, say, in the morning. The ram turned in with them will soon single out the ewes in season. These should be shut in a place by themselves. Service may then be allowed at intervals no closer than, say, two hours. A ram should not be allowed to give more than one service to the same ewe, nor to serve more than three in a day. The ewes should be kept in till the next day.

After the season of service is over, the grain ration given to the ram should be gradually reduced, but it is usually not wise to withhold grain altogether during the winter. Ram lambs want it to further development and old rams to sustain yield.

RAISING A DAIRY HERD FROM RANGE COWS IN NORTH DAKOTA

John Christianson of New Salem, N. D.

This paper was read by his son at the Tri-State Grain & Stock Growers' Convention at Fargo, Jan. 15.

In the spring of 1883, the first week in April, the advance guard of a colony of German settlers from Wisconsin, Indiana and Illinois, mostly from around Chicago, landed in Morton county, west of the Missouri river and located on the prairie on the main line of the Northern Pacific railroad, at that time incomplete, at what is now the village of New Salem. (The

HELP THE COWS
Even the best cows can't make big profits for the dairyman who persists in using pans or crocks or a poor skimming separator. Cream is cash, and if yours is just an "average" herd, then how much more necessary to skim out every drop! Why not help the cows boost your profits by skimming their milk with a reliable **UNITED STATES SEPARATOR**

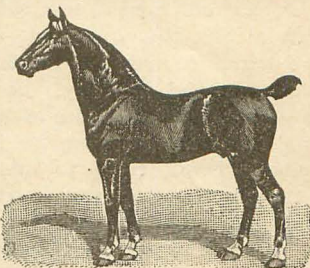
SKIMS OUT ALL THE CREAM.
HOLDS WORLD'S RECORD

A cream separator is an acknowledged necessity to profitable dairying, but before you buy why not look very carefully into the matter and buy the best one at the start? It's cheapest in the long run. We'll gladly send you, FREE, an illustrated book, telling what a separator can and ought to do. Please write us today "Send your book No. 127."

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As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

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Health for the Horse

Loosen up his hide and his intestinal system, purify his blood, drive out the worms, give him an appetite and power to digest and get the full value of all his feed. You can do all this by the systematic use of

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and have your horses strong, healthy and high strung. Mix with feed. Only a small quantity required. 1,200 measures in the big pail. Price only \$3.50 prepaid.

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Yamagata, 40966, 1st premium, gold medal and championship at N. D. State Fair 1906. Zip 13342, herd bull, first prize winner and sweepstakes N. D. State Fair 1905.

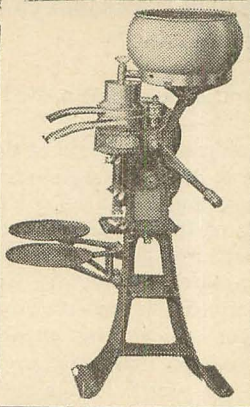
YOUNG STOCK FOR SALE.

CENTER LANE STOCK FARM,

Kenmare, N. D.

writer being one of the very first ones and has been here ever since.) After taking homesteads and erecting shelter of the most humble kind for the people and some kinds of sheds, mostly dugouts, and sod barns for what little stock and horses the settlers brought along, the question, what shall we do now to make a living in this new and untried country, became serious. From the experience of others we could not learn anything for there was nobody here, trying to make a living from farming when we arrived. The prospect looked blue, sure, although we were shown a few ears of corn at Mandan, said to be raised near there, but hardly any broken prairie was visible. We were told in the east of the fortunes made in Dakota territory by raising wheat and that we could get rich quick by raising wheat and then we could go back east and live in fine style. So accordingly we went to work and broke up the prairie, very slowly of course for want of power to pull the plow, but some breaking was done, grain put in, mostly wheat and oats, and as the work was naturally done poor and the seasons of the late eighties were dry, very little harvests were gathered for years. These conditions took the courage out of a great many of the settlers and some even went away after borrowing all they could on their land (\$300 to \$400 was all any one could get on a quarter section) and left their farms for other fields. A number of us stayed and as fast as we could got a hold of some cows that could be milked, and made butter from the milk at home and traded it in the New Salem stores for the most needed things for the house and family. Cash was never paid in those days for butter and the trade was very unsatisfactory to both parties. Chickens were also kept a good deal and eggs traded in the same way.

Thus the first years of the settlement passed, not always in plenty, and something had to be done, or tried, for a more certain income, and as feed, that is, natural pasture and prairie hay, was generally plenty and of good quality, live stock, cattle, horses and sheep had to come to the salvation. The establishment of a creamery was thought by some of the farmers, who came from the neighborhood of Egin, Ill., to be the only thing that was certain of success if milk enough could be produced. Before any action was taken, however, W. H. Mann, one of New Salem's old settlers and business men, with a view of improving the grade of butter, started a one-horse power creamery in the basement of his dwelling and sent a team out into the country



IMPROVED IN EVERY FEATURE

Have you seen and examined the New and Improved 1908 DE LAVAL Cream Separators? If not, and you own one or more cows don't further hinder your best interests by delaying longer but let us give you a free demonstration in your own home at once. You will marvel at the mechanical perfection, the wonderful simplicity and convenience of these new machines. These new machines show improvements in every feature, from the supply can to the base of the machine, and mark the greatest move forward in separator construction since the invention of the first practical separator by Dr. De Laval in 1878. If you have milk cows you cannot afford to be without one. - The new De Laval skims closer, has greater capacity, operates easier and is more ideal in every way than De Laval machines have been even in the past. The improved De Laval is actually ten years in advance of any other separator made to-day. There are ten new styles, ten new capacities and ten new prices. There is a machine for every dairy, from the smallest to the largest and at a price that will fit every pocket. Don't regret later that you didn't see the De Laval before you bought a machine but write us to-day for our handsome new catalogue describing the machines in detail and a free demonstration in your own home. You will be surprised. Don't delay.

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Lottie Melia Ann's
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Other registered bulls
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SIRE: Melia Ann's King, the Famous \$15,000
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DAM: Lottie Melia Ann, the cow with a record
of 20 lbs., 2 oz. butter in seven days, 9250
lbs. milk in one year, 23120 lbs. milk in three
years and dam of three tested daughters in the
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SIRE: Premier Longfellow, the World's Grand
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DAM: Lee's Charmer Belle 3rd. No. 92797.

For pedigrees and information of these
pure bred cattle and hogs write:

BOSARD FARMING COMPANY,

WARREN,

MINNESOTA

every day to gather cream that was mostly raised in long narrow cans kept in water. This was some improvement to making butter at home, but too expensive to run as not enough cream could be had. Results for the farmer were not very satisfactory, either, as no test of any kind was used. The good cream was not better paid for than the poorest and the first creamery did not run very long, but had done enough to show that cash could be gotten out of the butter. Then a movement was made to get a model creamery started in New Salem in 1894. The business men agreed to put up the buildings, put in the machinery, make the butter, ship the same, furnishing everything for 4 cents per pound for butter made, providing a number of farmers would agree to bring all the rock needed gratis and bring all the milk they had. This was agreed to and work was begun at once and the now famous New Salem creamery built, the first one in the state where only whole milk was delivered, and let me tell you right here it has been running successfully ever since, winter and summer, and has been a great benefactor both to the farmers and business men. A trip thru the country will prove this by the good substantial buildings, both houses and barns, and the herds of contented, well cared for cattle that can be seen on every farm from which milk is delivered to the creameries.

After the success of this creamery was evident it was only natural that new ones were established and at present there are seven creameries shipping their products from New Salem.

I would like to tell you now what we have and what we are trying to do to improve our herd, and by that means the profit therefrom. Our first method was by raising the heifer calves from our best cows, trying to raise them as dairy stock and with better care and feed have doubled the yield of milk from each cow every morning and evening, taking samples of their milk and testing for the per cent of fat each month. In this work we were considerably assisted by

Assistant Dairy Commissioner Flint, who supplied us with milk sheets and instructed us how to do the testing. As a result of our one year's weighing and testing for our herd of nineteen cows we found that they averaged 5,628 pounds of milk and 209 pounds of butterfat, which if made into butter would average 244 pounds per cow. We found that we had one cow that gave us 8217 pounds of milk that contained 273.2 pounds of butterfat; another that gave 7,494 pounds of milk with 275.8 pounds of fat. Our poorest cow that lived to complete the year's work gave 3971 pounds of milk that contained 135.4 pounds of fat. This last cow, tho, as near as I could figure paid for the feed she ate, but was not as profitable a cow as I wished and she was disposed of. We are continuing the test and believe it is profitable labor.

REGISTERED JERSEY BULL

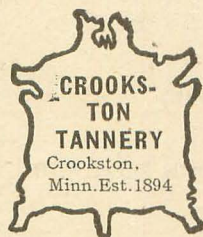
Pedro's Emperor 72039. St. Lambert, dropped Sept. 1902.

Took 1st premium at N. D. State Fair '03, '04, '05. Riota Empress, his mother produced over 5000 lbs milk with 1st calf.

Will sell cheap on account of being closely related to our herd.

W. E. & J. P. EBERSOLE

Upham, N. D.



HONEST WORK

Write and get acquainted with us. Horse and Cattle Hide turned into silky robes. Sheep skins and small hides tanned. You get back the hides you send Hides tanned for shoe and harness leather. Send for new Price List. Highest Bank references.

PLEASANT GROVE HERD

Shorthorn Cattle, Poland China Swine

We are making a specialty this season of shipping spring pigs. By shipping when not too large the express bill is lighter. We can supply boars and sows not related. Write us for descriptions and prices.

WINN BROTHERS,

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MINNESOTA POLLED DURHAMS

Purebred Registered Shorthorns Without Horns

Oldest herd in state. Both sexes, not related, for sale, either as foundation herds or separately.

Special prices on foundation herd.

A Polled Durham bull is the best dehorner.

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GREENVIEW STOCK FARM

Has 100 Poland China young pigs, sired by Rockwell Chief, Corwin U. S. 2nd and Prince Corwin. Sows strongly bred of Tecumseh blood. Orders booked now for fall delivery.

Pure Scotch and Scotch Cross Shorthorns, Young and old stock for sale. Call or write if you want North Dakota bred Poland Chinas or Shorthorns.

E. C. BUTLER,
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POLAND CHINAS

We have for sale several choice spring pigs sired by "Giant Perfection" No. 3477, a grandson of Chief Perfection, the 2nd, the greatest hog the Poland China breed has ever produced.

CENTER LANE STOCK FARM,
Kenmare, North Dakota

All Boys Interested in Corn Culture Contest Should Read Personal on Page 3.

WILLOW GLEN SHORTHORNS AND POLAND CHINAS.

HOME OF MINN. KEEP ON

He was first premium at Minnesota State Fair 1907. Have a few choice gilts for sale weighing 250 lbs. Bred to Minn. Keep On, at prices that will move them. We are building up as good a herd as can be found in the northwest.

Also have good bulls at right prices for sale.

R. F. D. 3., White Rock, S. D.

AXEL W. PETERSON,

ENVILLA STOCK FARM,

COGSWELL, N. D.,

200 HEAD REGISTERED ANGUS CATTLE—Calves, yearlings, bulls and cows of the best breeding and lowest prices.

150 SHETLAND PONIES AND GRADES—Any color, size or weight.

300 ANGORA GOATS—Kids, billies and nannies.

250 REGISTERED HOGS—Duroc Jersey, Improved Yorkshire, Hampshire, Improved Chester White and Poland China. Bred gilts and young pigs.

5000 HEAD POULTRY—All varieties: Rocks, Wyandottes, Leghorns, Reds, Brahmas, Orpingtons, Houdans, Minorcas, Games, Javas, Hamburgs and Bantams.

GEESE—Toulouse, Embden, Buff, Chinese, African and Canadian-wild.

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DUCKS—Pekin, Muscovy, Wild Mallard, Indian Runner and Rouen.

PEA FOWLS, PHEASANTS, PEARL AND WHITE GUINEAS, FANTAIL PIGEONS—Birds and eggs from above varieties. Some choice cockerels. Baby chicks one day old.

RABBITS, HARES, GUINEA PIGS, SQUIRRELS, COONS, ANGORA CATS, WOLF, FOX AND RABBIT HOUNDS. COLLIE DOGS.

Write us for complete price list of varieties. Remember we won 90 per cent of the Blue Ribbons the last two years at the State Fairs. Order your eggs for hatching, poultry and stock of

ENVILLA STOCK FARM,
Cogswell, N. D.

L. H. WHITE, Proprietor,

Registered Red Polled Cattle

Young stock of both sexes for sale.

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PEDIGREED LIVE STOCK AND
LARGE FARM SALES.

REFERENCE: Any pure blood breeder in the Northwest.

Graduate National College of Auctioneers.

FRANK H. HYLAND,

Devils Lake, - - - - - North Dakota

Poultry Department

By MRS. B. F. WILCOXON.

Sand is an important article in poultry culture.

Dampness is the root of all evil in the poultry business.

Darkened nests will do much towards preventing the egg eating habit.

To be effective the work with poultry must be done at the right time.

Give hens a variety of food. Who likes to eat the same thing day after day?

Fine feathers do not make fine birds, you say? Maybe not, but they go a long way toward winning premiums.

Share your skimmed milk with the hens. They will take it and turn it into the sweetest, most wholesome eggs in the world.

The hen that keeps herself busy scratching will always prove to be a layer. Industry and egg production are inseparable with hens.

Mark the pullets that have commenced to lay, to save them from the ax or market. They will pay for themselves before the sluggish ones begin.

Early chickens. To get them we must hatch them early and push them along to maturity so that by the time cold weather sets in they will have begun to lay.

Why not try a few capons? I have found them quiet, good-natured fowls, easy to care for and control. Their meat makes fine eating, and at selling time bring a nice little sum.

Do not think you can breed the black feathers out of a white hen. It cannot be done. The feathers will stick. To have pure stock, you must get pure blood. It costs. So does anything that is worth while. It will pay tho.

Hens properly cared for, become one of the sources of greatest profit, to capital invested, of anything kept on the farm, and if this branch of the farm work was not considered by so many as too small to merit their consideration, the farm flock could be greatly enlarged to the pecuniary benefit of those who give it their serious attention.

I have found sulphuric acid to be a good remedy for most all poultry dis-

eases. It seems to be a sort of cure-all remedy with me. A teaspoonful to a gallon of water. When there is infection it must be used every day; but when there is no disease not so often, or in smaller quantities if it be used every day. This preparation, simple as it is, is one of the best tonics for poultry known. It is alterative as well as tonic, and possesses, beside, antiseptic properties, which make it a remedy as well as a tonic.

What kind of hens?

Nobody can answer that, unless he knows who asks the question. One person likes one kind of hen better than he does another. Buff hens appeal to some, white to others, etc. If we are not certain which we prefer try and find out. What makes the difference some may ask. From experience I find that a person will take the best care of the kind that he likes best. So it is with every thing in this world, and this goes a long way toward success.

LEGHORNS

G. F. Babcock, Turtle Lake, N. D.

Leghorns are the best known of the egg-producing varieties or Mediterranean class and are considered the most economical producers of eggs of all varieties of poultry. They hold the same place among poultry that the Jerseys do among cattle.

Leghorns are lively and active, the best of foragers and on a farm will pick up a large part of their living thus lessening the expense of their keep which adds to their profitableness and makes them especially valuable to the farmer, and a house that will properly house fifty of the larger breeds will be plenty large for seventy-five Leghorns; and again the cost of raising one Leghorn to maturity will not exceed one-half the cost of maturing some of the large breeds.

The Leghorn is early to mature and is one of the strong points in a fowl for the northwest. All people know that unless a pullet is hatched sufficiently early to reach maturity before winter sets in it is very few eggs she lays before the following spring, and the lateness of some of our springs makes early hatching and rearing of chicks quite a task for most farmers. The northwest is a country for early maturing grains, vegetables, etc. and poultry is no exception to the rule.

The only great objection that has ever been raised against Leghorns is their susceptibility to frostbite of the comb and as necessity is the mother of invention it did not take long for the Yankees to produce a Leghorn with a low rose comb and today the Rose Comb Leghorn hen is no more liable to have her comb frozen than a Wyandotte and not as much so as some of the single comb varieties.

The Rose Comb Leghorns are becoming more and more popular as their merits become known. In New York and New England where the winters are long and severe they are held in high esteem and we predict a growing demand for them here in the northwest. To say that they are an improvement over the single combs in being less liable to freeze their combs is all their most ardent admirers claim for them, and that is enough, that they are the equal of the single combs in other respects we fully believe, and we have bred them both.

PROFITABLE POULTRY RAISING FOR NORTH DAKOTA FARMERS

(Paper read before the Grain Growers' Convention.)

By O. W. Dynes, North Dakota Agr. Col.

"Very few people realize the importance of the poultry industry of our country as a factor in the production of national wealth. Secretary Wilson estimates the value of the poultry products of the United States for 1907 at \$600,000,000. This is greater than the total value of the lumber production of our country, \$100,000,000 more than the wheat crop and over three times the value of the total dairy products during the same year. To give you something of an idea of the magnitude of the poultry interests in the United States, it has been estimated that it would take a freight train of ordinary cars, 1,060 miles in length, to carry the egg crop of 1905. Restricting ourselves to our home state, it surprises us to find that a conservative estimate of the farm value of eggs and poultry during the year 1905 was over \$2,000,000. This sum is sufficiently large to pay one-fourth of the yearly farm help bill of North Dakota.

"In discussing profit in poultry farming I wish to confine myself to the problem of egg production. While the sale of market poultry assists very materially in adding to the income of the poultryman, yet the limited time I am allowed to speak forbids any discussion of this particular phase of the subject. The poultry fancier also has his legitimate field of work and should

receive encouragement, and I hope that no farmer will go away from this convention without first visiting the poultry show held in the building across the street. In my discussion, therefore, I will leave out of consideration the growing of marketable poultry and raising fowls for exhibition and breeding purposes, thus limiting myself to the field of egg production. That there is room for improvement in increased egg yields among the poultry flocks of North Dakota cannot be questioned. The average North Dakota hen lays about sixty eggs a year. A knowledge of the means to increase that yearly average should be the aim of every poultry raiser. This past year the poorest laying hen in a pen of twenty birds at the North Dakota Experiment station laid 73 eggs in 365 consecutive days. The hen with the highest record in the same pen, had 214 eggs to her credit. This example is cited simply to show the possibilities of careful selection, and if in addition the North Dakota hen is given the right kind of feed and proper care and management, a large increase in her yearly record would undoubtedly follow.

"Successful egg production with the poultrykeeper is largely dependent on four main factors, i. e., first, Housing; second, Feeding; third, the Stock; fourth second, Feeding; third, the Stock; fourth, General Management.

Housing

"Kind of House Recommended—No one style of poultry house can be recommended as best for our climatic conditions in the northwest. We are working on this problem now on the experiment station, where we have attempted to demonstrate the effect on egg production when hens are kept in a warm house as compare to hens housed in a relatively cold building. The results are not yet for publication, but our experience has shown that warmly built poultry houses are not essential to good egg production. If you are building a poultry house don't build it as warm as you would your cattle or horse barn and don't nte artificial heat. Select a well drained site on which to build your honte with a south exposure to the pens. Give your birds approximately about five square feet of floor space and thirty cubic feet of air space per fowl. The style of architecture which you use is not a material consideration if the three cardinal principles of successful poultry housing are well understood. These are, first, Adequate Light second, Proper Temperature; third, Good ventilation.

"Light—Plenty of sunlight is highly essential to the best health of the fowls and an abundance of this should be tupplied. One square foot of window-

light to ten square feet of floor space is a safe rule to follow. Sunlight seems to act as a tonic to fowls in winter quarters and proves a great stimulant to the production of eggs.

"Temperature—A wide variation in the temperature of the poultry house should be avoided. On sunny days the temperature will rise quite markedly and this is likely to prove detrimental to the best health of the fowls. At the experiment station we have found that a temperature of about 40 degrees Fahr. during the day gave the best results, while at night it is allowed to drop to the freezing point. The temperature of the house is largely adjusted by means of the windows, the regular ventilators proving inadequate for that purpose.

"Ventilation—Fresh air is more important than warmth in the poultry house. Warm, ill-ventilated houses produce enervation in the fowls and a consequent lack of egg production. No system of ventilation will be found satisfactory in a frost proof hen house without the use of the windows as an aid. The windows should be so constructed that they can be easily opened, especially during sunny days or the milder nights of winter. Cold drafts must be avoided, however. The use of a cloth frame curtain will prevent trouble of this sort and on the station poultry plant we have found this a splendid adjunct to our system of ventilation. Either muslin, burlap or ducking may be used for this purpose. We use a ten-ounce duck cloth and so far this winter the windows have been kept open both day and night. The windows are arranged in pairs, two windows to each pen, and the cloth frame is placed on each alternate window. Some of the sunlight has been shut off, but it has given better ventilation and a house free from dampness and disagreeable odors. Of these three factors which the poultryman must to a certain extent control, viz., Light, Temperature and Ventilation, the problem of fresh air is the most vexing. The use of cloth curtains and an intelligent management of the windows is the best solution yet offered.

Feeding Laying Hens

"There are three general classes of foods which fowls should have if the best results are to be obtained. These are, first, grain feeds; second, animal food, and third, green food.

"Grain Feeds.—All of the well known cereals with the possible exception of flax make good feeds for poultry. Wheat is probably the best single grain feed, leaving cost out of consideration, we have, as it contains the nutrients in a better balanced form than the other grains. In wheat rais-

ing districts it can well form one-half the daily ration of hens. Corn is next in value and importance as a food for poultry. It is a cheaper feed than wheat but it is too fattening unless fed with some care. It should be ground or cracked for chicks but can be fed whole to older birds. Fowls do not take readily to oats but it makes a very desirable food if fed as a supplement to corn. Barley is not as palatable grain for hens as the grains we have just mentioned but when ground makes a good food for all classes of poultry."

Animal Food—All fowls crave animal food of some sort and it must be used to supplement the grain ration if good results are to be expected. There are several forms in which this may be supplied. The commercial article called beef scraps and green cut bone are in most common use. While green cut bone is probably superior to beef scraps as far as actual feeding is concerned, yet the difficulty of securing it, the labor involved in cutting the bone and the fact that it spoils easily does not make it a very satisfactory feed. Skim milk is an excellent protein food and can be fed with profit. Kitchen scraps are also a good source of animal food and should be saved and fed to the hens. The average flock of laying hens is fed too little animal food and while it may seem an expensive policy to purchase the commercial article yet it will pay in dollars and cents, if used in a judicious manner.

"Green Feeds—Under ordinary farm conditions hens lay best during the spring months when they have free range and plenty of green food. The poultry keeper should aim to surround them with summer conditions as far as possible in the winter months. While perhaps he cannot allow them free range he may at least supply in

LOOK HERE!

Now is the time to give me your order for eggs for hatching purposes. Excellent laying strain. SINGLE COMB WHITE LEGHORNS. Setting of 15 eggs, \$1.00.

I guarantee fertile eggs.

ALBERT T. BOE

Box 45

Greenbush, Minn.

ROSE COMB WHITE LEGHORN EGGS

15 for \$1; 30 for \$1.50; 100 for \$4. Circular. M. F. Horning, - - - Alden, Minn.

"THE BREED THAT LAYS IS THE BREED THAT PAYS"

ROSE COMB WHITE LEGHORNS

State Show Winners

Eggs: \$1.25 per 15; \$3.00 per 45; \$5.00 per 100
G. F. Babcock, - - - Turtle Lake, N. DD.

limited quantities the green food which the hen craves and which it must have if the best results are obtained. Clipped lawn grass or short-cut alfalfa, steamed and fed alone or with a mash will be found very satisfactory. Any of the vegetables, such as cabbage, turnips, beets or mangolds, fowls will eat with great relish. By the liberal use of green food the poultryman can duplicate in a measure summer conditions for his flock of fowls.

"How to Feed—The plan of feeding laying hens on the station poultry plant is substantially as follows: In the morning whole wheat is fed in the deep litter on the floor of the pens; at noon a mixture consisting of one part each of bran, shorts or middlings, corn meal, linseed meal and beef scraps is fed in the form of a mash. The green food, which has previously been steamed with hot water, is mixed with the mash and also fed. At night the feed consists of oats and corn fed in the pen litter as in the morning.

"How much to Feed.—No absolute rule can be laid down as to the amount of feed to give laying hens. A plan which has been very satisfactory with the station flock is to feed one pint of wheat to each pen of 20 hens in the morning and one pint of oats with all the corn on the cob they will eat for the evening feed. At noon they are given all the mash which they will eat up clean. As the grain is measured out to them and the amount is therefore somewhat arbitrary, the birds are allowed to eat up all they want of the mash. The mash thus acts as sort of a regulator on the appetite of the birds. The fowls are forced to scratch for the grain feeds thus giving them the needed exercise which is conducive to an active existence. Good judgment on the part of the feeder must be used at all times.

Selection of Stock

"Breed Selection—No one breed of fowls can be commended as best for North Dakota or any particular locality within the state. And yet, I believe, that the most profitable farmers' fowl is one of the general purpose type or a fowl that combines both the egg and meat producing qualities. The selection of one of the varieties of the Plymouth Rock, Wyandotte or Rhode Island Red breeds will be found satisfactory. As to choice of the particular variety within the breed, individual tastes differ but whether the birds shall be black or white, solid colored or particolored, is not a material consideration from the standpoint of economical production.

"Selection of Breeding Stock.—The common practice, as followed in the average farmyard, of using the entire flock as breeding stock has little to

commend it. Eggs from all of the birds, good and poor alike, are used for hatching purposes. The logical result of this practice is that you bring the size, weight, health and stamina of the progeny down to a level with the average specimen of your flock. As far as improvement in the flock is concerned you remain either at a standstill or else deterioration takes place. Use no undersized, immature or anything but the most healthy specimen in the breeding flock. Select a breed that suits you and above all don't mix the breeds. If you have a grade flock and do not care to part with it use pure bred males or some good breed each year and stick to that breed. Be careful of too close inbreeding and to the farmer whose flock runs at large I would advise against the use of cockerels of his own breeding or the use of the same males two years in succession. If these few simple rules are observed you will raise fowls of greater stamina, better health, larger size and increased fecundity."

General Management

"No flocks of fowls will care for themselves and produce a profit. The personal equation enters largely into the poultry business and much of the success of the poultryman depends on care and attention to details. A devotion to all phases of the work is essential to the best success. Punctuality as regards the time of feeding; keeping the house properly ventilated and thus having the walls and ceilings dry at all times, observing a rigid cleanliness in the pens by placing dropping boards, under the roosts; using ashes or sand on the dropping board, thus absorbing all disagreeable odors so detrimental to the health of closely housed fowls; these are some of the essential features of successful poultry raising. An invasion of parasites, such as lice or mites must be continually guarded against.

"The rearing of poultry in North Dakota is a comparatively new industry in a new state. If it keeps pace with the other industries of the state it will need a wider dissemination of the knowledge of better housing, better feeding, better stock and better management. The North Dakota State Poultry association and the farm papers are doing a notable work in educating their patrons and readers on more efficient methods and practices in growing poultry. Your own Agricultural College and Experiment station

stands ready at all times to do what it can in the furtherance of the poultry interests of the state."

WEBER'S BOOK ON POULTRY

Tells how to prevent and cure diseases. Describes 30 best paying varieties of fine pure bred chickens, Ducks, Geese, Turkeys, Eggs and high grade incubators. All at low prices. Send 2 cents for Book.

W. A. WEBER, Bx., 923,
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BIGGER POULTRY PROFITS

Our new 128-page Poultry Book teaches the inexperienced and gives the expert many valuable hints. Tells why

"SUCCESSFUL" INCUBATORS AND BROODERS are best. Offers 14 varieties of fine birds and eggs at low prices. Catalogue free. Booklet on "Proper Care of Chicks, Ducks, Geese and Turkeys," 10 cents. Poultry paper 1 year 10 cents.

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WHITE,
BUFF AND
GOLDEN

WYANDOTTES

Strong, vigorous, quick maturing, heavy-laying, fowls. They are large, handsome, full-breasted, blocky birds with good combs, eyes and legs.

EGGS for hatching \$2.00 for 15; \$3.50 for 30; \$5.00 for 45; Incubator eggs \$6.00 for 100.

THEY ARE **PROFIT MAKERS** TRAP-NESTED STANDARD BRED

Start a paying flock now. Get the benefit of my years of careful selection and mating. Free cataog. Satisfaction guaranteed.

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Mankato, Minn.

EGGS! EGGS! EGGS!

For hatching, from my heavy laying strains of **Thoroughbred Poultry**. Eggs from all varieties of Plymouth Rocks and Wyandottes at \$1.50 per 15, \$4.00 per 45, \$7.50 per 100; from all varieties of Leghorns \$1.00 per 15, \$2.50 per 45, \$5.00 per 100. **Satisfaction Guaranteed** in every sale. Send in your order, or write for my large illustrated circular. It tells all about my great laying strains of Fancy and Utility Poultry and about my Pigeons, Rabbits, Bull Terrier Dogs, etc.

DAKOTA POULTRY FARM

A. K. Johnson, Prop. Kensal, N. D.



All varieties of standard bred chick-
ens, ducks, geese, turkeys, pea-
fowls. Send 4 cts. for catalog. J. J.
Brenner, Dept. 11, Mankato, Minn.



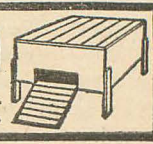
All Leading Varieties Strictly Pure Bred **CHICK-
ENS, DUCKS, GEESE, TURKEYS, EGGS**
and **FREE TRIAL INCUBATORS** at right
prices. **DON'T BUY** till you see what we
offer. A. I. References. Send 2 cts. for
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TRY FARM**. Dept. 20 MANKATO, MINN.



125 Egg Incubator and Brooder

Both For **\$10**

If ordered together we send both for \$10 and pay freight. Hot water, copper tanks, double walls, double glass doors. Free catalog describes them. **WISCONSIN INCUBATOR CO., Box 110 Racine, Wis.**



A yard of strong vigorous birds will want to get out on the coldest day, and they will do very much better for it. Coddling is not conducive to strong fertility, as all it does is to engender laziness, and this last is simply the beginning of the end, the end of eggs in any great numbers, and those gotten will not produce strong chicks.

A hen which has no more ambition than to stand around and shiver with her feathers on end when she ought to be scratching ought to be taken out of the pen and kept for herself, and given no other food then she will dig good and hard to get, and this treatment will reduce the flesh or fat I should say, and generally makes a hustler out of her which was a good-for-nothing and yet the hen is not always to blame, for they are very much like humanity, in getting as much as they can and for as little labor as they can, and many a flock of otherwise good fowls has been useless by overfeeding and coddling.

Open up the windows, give air, plenty of it. When you do there will be no wet walls in the poultry house, nor a lot of sneezing hens or hang-arounds, but birds that will go singing to their work and look health and activity all over, and that means plenty of eggs, and fertile eggs, and strong chicks. There are so many poultrymen so fond of trying things, but it is unwise to try anything except we try it in the right way, and when eggs are wanted for hatching, and lots of them, that certainly is not the time to experiment.

A healthy fowl needs no stimulants, and fowls that are not in health have no business in a well ordered breeding yard.

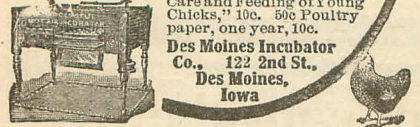
Succeed with a Successful

The incubator that works as well for the amateur as for the professional—that has the best and most economical heating system—the most perfect ventilation—lamp that saves $\frac{1}{4}$ the oil—that has the only real practical egg tray—is the

Successful Incubator

Our free, interesting, practical incubator book tells you why the Successful Incubators and Brooders are the only safe, sure chick raisers. Send for it and find out what our strong guarantee means to you. Book on "Proper Care and Feeding of Young Chickens," 10c. 50c Poultry paper, one year, 10c.

Des Moines Incubator Co., 122 2nd St., Des Moines, Iowa



Big Money in Poultry

Stock for sale at reasonable prices. Write for my catalogue of Poultry and Supplies.

MRS. B. F. WILCOXON,
Ft. Des Moines, Iowa.

All Boys Interested in Corn Culture Contest Should Read Personal on Page 3.

Pure Food Department.

All Matters Pertaining to Foods will be Discussed in this Department

Dr. Wiley in an address in Boston recently stated that the department had seized 85 barrels of pure apple cider on its way to a prohibition state, which contained 12% of alcohol. It was said that this particular kind of cider was in great demand.

Good, hard cider has 4 or 5 % of alcohol in it, which would clearly indicate that the product was an artificial one, prepared especially to be sold in prohibition states under the guise of cider, which in reality should be classed as an intoxicating beverage.

The final conclusion, however, is the one which should appeal to the housewife endeavoring to keep down the cost of living.

"The cost of these foods is low, if they are regarded as confections to please the taste, but very high if they are to be treated as substitutes for the ordinary domestic cereal products."

Those who are interested in breakfast foods would do well to send for a copy of bulletin No. 162, Department of Agriculture, Harrisburg, Pa.

COLD STORAGE MEATS

Says Dr. Cavana, before the New York and New England Association of Railway Physicians: "It is a well established truth that decomposition of organic matter begins the instant that such matter is deprived of life, and that all varieties of decomposing matter contain to a greater or less degree chemicals and that the more advanced the stage of decomposition, the more active the qualities of such poisons."

He calls attention to the fact that even by freezing the process of decomposition is not fully suspended, and states that the great multitude of sufferers from digestive disorders are victims of this class of poisoning. After eating meats of this type, colic, nausea, headache, cholera-morbis, and most of the attacks of diarrhea and dysentery are traceable to this cause.

He says poultry is bought and sold by weight and generally commands a price from twelve cents upward. Poultry raisers, as a rule, precede the marketing of their stock by liberal cereal feeding, which fact accounts for the full crops generally found by our domestics while preparing their poultry for cooking.

He says: "Imagine the probabilities connected with the Thanksgiving turkey or chicken in a cold and unfrozen state for weeks and even months, their crops stuffed with partially digested food in a state of continuous fermentation during this long period."

Are we giving enough attention to the matter of poisoning from the eating of partially decayed food stuffs which have been in cold storage for months and possibly years?

THE BLEACHING OF FLOUR

Dr. Freas of the Pennsylvania State College has been making a careful study of flours and of the presence of bleaching

WHERE FRENCH WINE COMES FROM

Lovers of Rhine wine and Moselle will be shocked to learn about the wine dealer who has just been convicted of having sold 35,000 gallons of fine Rhine wine which he had made artificially with the help of chemical substances without using a single drop of real wine. During the trial a chemical expert testified that a dealer in drugs had sold to wine dealers within seven years, 300 tons of glycerin, 120 tons of tartaric acid, ten tons of potash, and 11 tons of citric acid.—Exchange.

BREAKFAST FOODS

A great deal has been said of late with regard to the character of breakfast foods, and the material which enters into the same. It has even been claimed that some of these foods have been made of corn cobs, bran, etc. An examination of a large number of breakfast foods on the market by Dr. Frear for the Pennsylvania Dairy and Food Division shows the falsity of these statements. It has, also, been claimed that some of the breakfast foods contain tonics, even strychnine, etc., but in every instance the fallacy of the claim was shown by these investigations.

Some of the conclusions reached by Dr. Frear may be briefly summarized: "The condition of the samples with regard to dryness was good, but many of them were wormy."

There was no evidence of the use of bleaching agents in any of the breakfast foods, except in the case of a few pancake flours.

The net weight contained in the packages was most variable."

agents. He says in the samples of flour examined there were no traces of sulfurous acid used as bleaching agent, but several exhibited considerable amounts of nitrous acid which was used for this purpose. He then concludes:

"The sale of flours that have been bleached should not be permitted without a proper declaration of this treatment; however, while it may be said that the effect of the treatment is an improvement in the appearance of the flour, the real object is to make possible the sale as a high grade article of flour known by its color to be an inferior product."

He thus says that it is in violation of the spirit of the Food Law, which says: "A food product is adulterated if it be mixed, colored, powdered, or stained, whereby damage or inferiority is concealed."

The conclusions of Dr. Frear are, therefore, in harmony with the views which have been maintained by the North Dakota Food Department, and all who have carefully studied the question, not from the standpoint of the manufacturer, but from that of the consumer, have come to the same conclusion. The manufacturer and his experts, however, are ready to maintain that no harm comes from bleaching.

It is a question, however, whether the expert employed by the manufacturer would in reality recommend the product for his own family.

THE EXCESSIVELY GOOD MAN

"He has no enemies," you say;
My friend, your boast is poor;
He who hath mingled in the fray
Of duty that the brave endure
Must have made foes. If he has none,
Small is the work that he has done,
He has hit no traitor on the hip;
He has cast no cup from perjured lip;
He has never turned the wrong to right.
He has been a coward in the fight.

—Ex.

UNDRAWN POULTRY AND FISH

Dr. Fay of Sacramento has called attention to the bad effects of using undrawn poultry that have been kept for a considerable length of time. He says:

"It is the general custom in U. S. to dress the fowls and ship them without either removing the crop, the elementary tract, or the head; and that often the animals, before being killed, are liberally fed to produce plumpness and improve the appearance and good weight."

He says that many cases of poisoning toxicosis results from eating decomposed food of this character, and that this is a well-known fact to the medical profession.

Attention is called, also, to the fact that investigations made by the Department of Agriculture show that, under precisely the same conditions of temperature and humidity, drawn fowls will keep from twenty to thirty days longer than those un-drawn, which is contrary to the claims of the butchers who desire to sell undrawn fowls.

WE MAKE CANDIES Of Merit and Quality. CONGRESS CANDY CO.,

GRAND FORKS, N. D.

WRITE FOR OUR

Pure Food Grocery Catalog. FARMERS' SUPPLY HOUSE,

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HONEY Well ripened clover Honey for Sale, guaranteed absolutely pure and of the finest quality. One 30-lb. can 11 1/2c per lb.; 2 or more cans 11c; 12-lb. cans, in full cases of 72 lbs., 11 1/2c per lb. Send for price list. Address
M. V. FACEY, Preston, Fillmore Co., Minn.

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—TO—

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WE PAY DRAFTS.

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"The Cash Grocer"

We buy in large quantities, for cash only, for our various stores and can save you money.

Big Store Big Stock Big Sales Small Profits Cash

60
CUPS FOR
15 CENTS



MEAD'S CEREAL BLEND

LOOKS LIKE COFFEE } BUT
TASTES LIKE COFFEE } IS NOT
SMELLS LIKE COFFEE } COFFEE.

Is a Scientific blend of the Choicest Rye Wheat and Barley Grown, no hulls, chicory or dope in it. Aids digestion and cures dyspepsia. Costs 1/2 less than Mocha & Java—is 20 times better. A pound package post paid on receipt of 25 cents. Write for our three special offers. Ask your grocer for it first.

MINNEAPOLIS CEREAL CO.,

Coffee Dept.

Agents wanted everywhere. Minneapolis, Minn.
U. S. SERIAL 712

Not merely fit to eat but good to eat---dainty,
wholesome, appetizing quality

ARMOUR'S TRADE *Veribest* MARK **MEATS.**

Packed in Air-Tight Tins.

"U. S. Inspected" purity plus ARMOUR quality.

Pure Food Advertisers

The products advertised below are in compliance with the pure food law of North Dakota and of the highest grade.
ASK YOUR GROCER FOR THEM.

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"EAT"

HOME

BRAND

Pure Food Products

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Griggs, Cooper & Co.

MANUFACTURING
WHOLESALE
GROCERS,

ST. PAUL, MINN.

Main Offices:
CORNER THIRD AND BROADWAY

GRAND PRIZE

(The highest honor)

Awarded to

DR. PRICE'S
DELICIOUS
Flavoring
Extracts

At the

ST. LOUIS
EXPOSITION.

For sale by all representative grocers.

"FOR THOSE WHO CARE."

NOKOMIS CANNED GOODS

ARE

Selected Fruits and Vegetables.

ABSOLUTELY PURE.

Packed with Greatest Care in Sanitary Cans.

Stone-Ordean-Wells Company,

WHOLESALE GROCERS.

DULUTH, MINN.

MINOT, N. D.

RETAILERS PROTECTED

The National Food Law did not take effect until January 1st, 1907; and all goods on hand or receive by you prior to that time, are not affected in any manner by the National Food Law, and will not be, unless shipped from one state into another after the law goes into effect January 1st, 1907.

For your protection, it is necessary that you handle only pure goods, properly labeled within the meaning of this law and we, therefore, call your attention to the fact that food products sold to you by us are not adulterated or misbranded and are all guaranteed to conform to the requirements of all food laws, both State and National. This guarantee protects you from prosecutions under the National Food Law on any food products purchased from us hereafter.

REID, MURDOCH & Co.,

Chicago.

Libby's

Food
Products

Canned Meats Pickles Olives
Preserves etc.

Libby, McNeill & Libby.

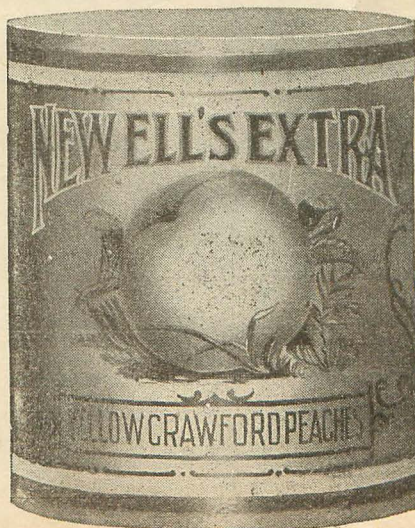
NEWELL'S EXTRA LINE

Represents the highest quality of food
products that can possibly be obtained.
Purity and quantity always stand fore-
most.

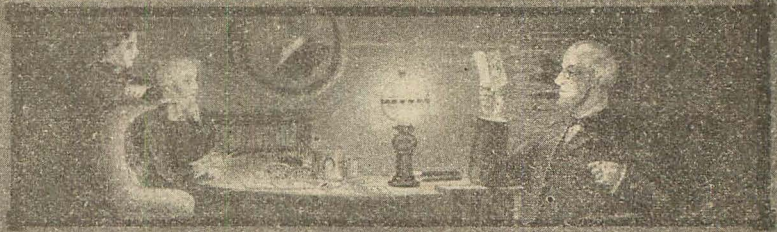
Geo. R. Newell & Co.,

WHOLESALE GROCERS,

MINNEAPOLIS, - - - MINN.



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To produce the highest quality in paint, there must be but one incentive; the will to do it. If the question of profit or individual preference is allowed to influence or prejudice its composition, success in reaching perfection is balked.

Science can recognize nothing but truth. Intention may be honest and desire laudable but if either swerve from the fixed principle of law and fact the discovery of truth must wait for the unbiased mind to reveal it.

The **HORSE SHOE PAINT** is made of materials recognized and accepted by all authorities practical and scientific as the best known for paint making. There is nothing in it about which there is any question or dispute. It's a pure zinc, lead and linseed oil paint, with the necessary pure drier and tinting color. All standard, nothing experimental.

When all authorities are as fully agreed as they are on zinc, lead and linseed oil, that some other material is necessary to improve it, we will add that to its composition. Until then the **HORSE SHOE BRAND** will remain as it is, a composition of the standard paint materials, free from everything doubtful or experimental. That is a course equally safe for all parties.

Mound City Paint & Color Co.,

ST. LOUIS, U. S. A.

Norris B. Gregg, Pres.

Wm. H. Gregg Jr., Vice Pres.

E. H. Dyer, Sec'y

